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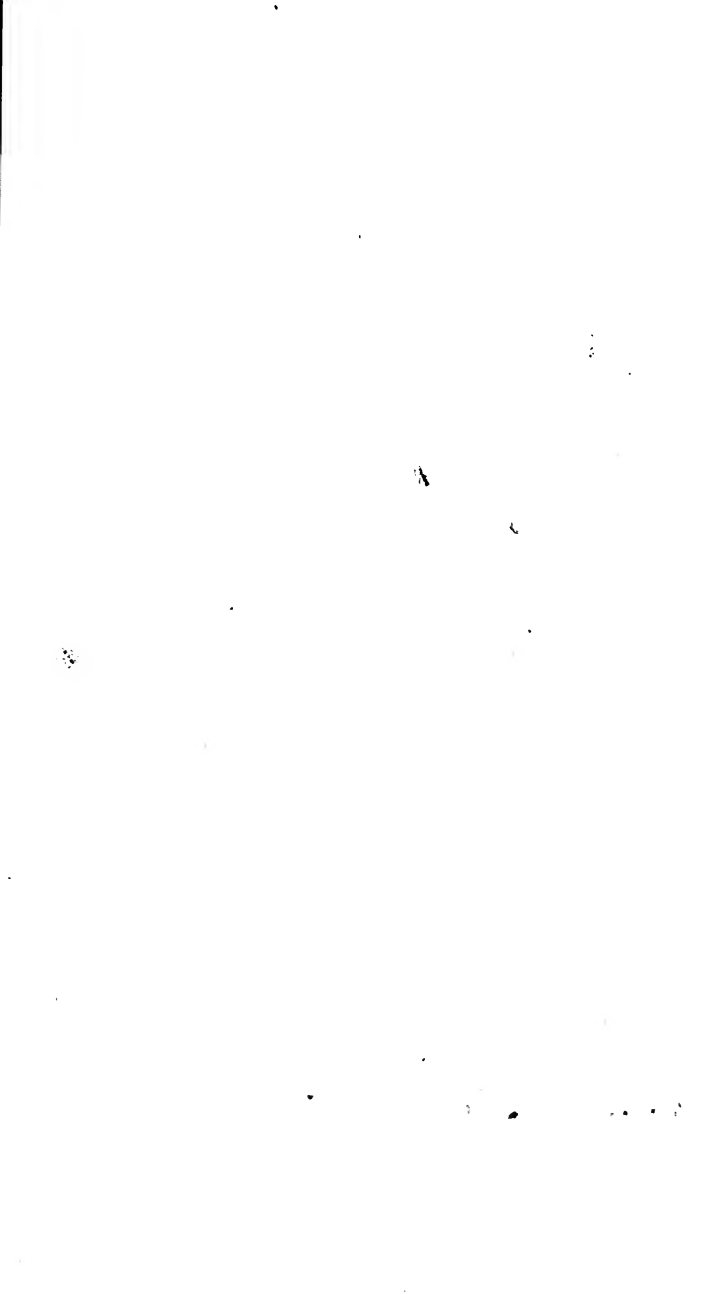
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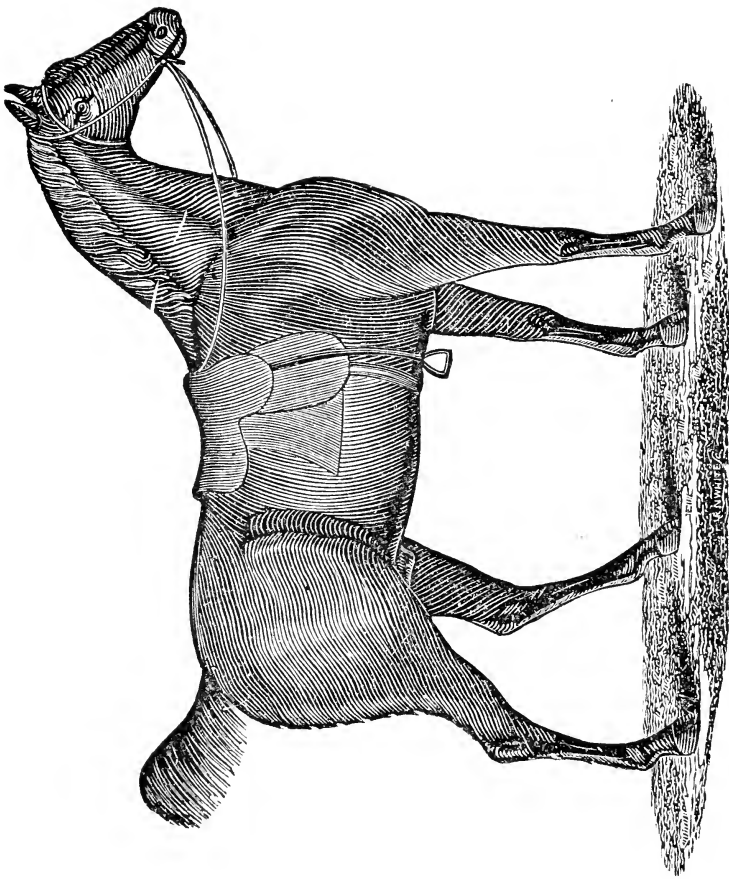


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James P. L. Westcott
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THE
PRACTICAL FARRIER,
FOR FARMERS:

COMPRISING

A GENERAL DESCRIPTION OF THE NOBLE AND USEFUL ANIMAL,

THE HORSE;

WITH MODES OF MANAGEMENT IN ALL CASES,
AND TREATMENT IN DISEASE.

TO WHICH IS ADDED,

A PRIZE ESSAY ON MULES;

AN APPENDIX,

CONTAINING RECIPES FOR DISEASES OF HORSES, OXEN,
COWS, CALVES, SHEEP, DOGS, SWINE, ETC. ETC.

J. Y. RICHARD MASON, M. D.
FORMERLY OF SURRY COUNTY, VIRGINIA.

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PREFACE.



FEW subjects can more justly claim the attention of the public, than that noble and useful animal, the horse; and there are few indeed of any moment, that have met with more neglect from society. Not more than one or two authors in the United States have turned their attention to this interesting subject. This neglect, in which every individual is so deeply interested, must have proceeded from the low standing in society to which the horse has been sunk by men destitute of veracity, too often having the opportunity of dealing in those invaluable animals, committing frauds, making false statements of age, gaits, condition, &c. to the injury of those who are unfortunate enough to confide in their assertions, or to deal with them.

In this little work, whose size is calculated for the pocket, I shall endeavour to guard the unsuspecting against the arts of the jockey, and to point out so plainly the difference between an elegant and a common horse a good and bad horse, a sound and an unsound horse that any person may become a tolerable judge, by reading this little book with attention, however unfamiliar the subject may have been heretofore. It is my object to be useful rather than offend, or appear learned. I shall avoid all hard names, technical terms. &c.; and will offer to the public the information I

possess, with candour and simplicity. In a work of this nature, the claim to entire originality must be relinquished; so far from attempting it, I confess I have, in a few instances, made quotations from other authors, when I have found from experience they contained matter, useful, clear, plain, and familiar for my purpose. I hope this acknowledgment will be received in place of marks of quotation.

Amongst the great number of animals under the control of man, the excellent horse, unquestionably, is the most serviceable. How often do we see him the sole dependence of the poor farmer and his family, with whom he divides the morsel, shares in the toils, and by slowly turning up the soil, not only keeps them free from want, but fills the barn with plenty! Trace him from the lowest to the highest situation, you will find him faithful, affectionate, and no less useful. In every species of farming, the horse bears the principal burden, and is the means of increasing wealth and happiness. In the transportation of foreign growth and manufactures to the interior of our country, and the exportation of the produce of the United States, the faithful horse affords a speedy conveyance to and from the water's edge. For the quick communications by posts and stages, even with the most remote parts of the union, we are indebted to the horse. Even our happy republican government has been established, protected, defended, and administered, by the means and aid of these noble animals. Men of every profession, must all acknowledge the benefit derived from him; indeed he has been the very spring of punctuality and attention to business of almost every description. The horse, in his nature, is mild, patient, forgiving, and affectionate. After being hard used, half starved, and unmercifully beaten, who recol-

lects ever to have seen him appear to feel the injury, pout over his scanty allowance, or discover hatred towards his cruel master? View his gentleness and kindness to a sot, who has indulged too long over his glass, often bending, turning and yielding to his giddy head; and finally, when he is prostrated in the dust, now often does the sagacious animal, when compelled to tread on him, bear lightly and tenderly; and when loose, appear unwilling to leave the helpless drunkard: how often on his back are we conveyed in safety at night amidst difficulties, dangers, and unfamiliar roads? And where is the traveller that does not recollect that when returning on his journey, and in search of his home, when a road before unnoticed, had bewildered and stopped his progress, how readily and how faithfully has the horse thrown his ears towards the right road, and with quickening steps discovered his eagerness to reach his home? See him in the race, resolute, eager, and delighted, swelling every vein, and exerting every muscle and fibre to win the prize. Behold him in the field of battle, furious, intrepid, and full of fire, forgetful of danger, rushing on the point of the bayonet, delighting in the glittering of arms, and panting for victory. View him in the civil and more happy circles of domestic life, in the service of the rich, the liberal, and the happy, proudly and smoothly rolling behind him the rattling chariot wheels, with an aspect lively, gay, and cheerful. It to an animal like this, I can be the cause of adding to his comfort, improving his condition, making him fat, relieving his pain, removing disease, and sometimes save life, I shall feel as if I had rendered a service to the community at large, and performed a part of the task assigned me.

When the reader reflects that a large volume has been written on the anatomy of the horse's foot alone, he will easily conceive my confined, embarrassed, and cramped situation; having to treat of so many different parts and subjects, within the scope of two hundred pages. In doing of this, it will be impossible for me to give more than the skeleton or bare outline of the interesting theme, which I hope, at some future day, will be filled up and completed by some more fortunate genius.

THE AUTHOR.

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THE
POCKET FARRIER.



SADDLE HORSE.

WHEN a horse is purchased for the saddle alone, it is to be presumed he must be clear of all defects, strike the fancy, entirely please the eye, and, from his happy symmetry and due proportion of form, stand the second beauty in the world. When this is the case, he is seldom disposed of at too high a price.—Amongst the great number of people in the United States, I am induced to believe, there are but few good judges of a horse calculated for the saddle. Indeed, they are better informed upon almost any other subject that can be mentioned. Yet the Virginians have a large number of fine horses, and are accused of devoting too much attention to that beautiful animal. Among all the difficulties attending the affairs of common life, there is not, perhaps, a greater than that of choosing a beautiful, an elegant, or good horse. Nor will this appear strange, when we consider the number of circumstances that are to be taken into consideration, with regard to shape, size, movements, limbs, marks, eyes, colour, age, &c. &c.—which are so various that it would fill a volume to describe; and indeed the best judges are often obliged to content themselves with guessing at some things, unless they have sufficient time to make a thorough trial. If I were asked, what were the two most beautiful objects

in nature, I would answer, that woman, lovely woman, before whose charms the soul of man bows with reverence and submission, stands unparalleled; next to this matchless paragon, a beautiful horse displays nature in her highest polish and greatest perfection; his gay and cheerful appearance, proudly prancing and bounding, his elegance of shape, smoothness of limbs, polish of skin, due proportion of form, and gracefulness of action, united to a mild, soft, faithful, and patient disposition, raise him far above the rest of the brute creation. I shall now proceed to lay down some rules, and to give some hints, for the examination of a horse previous to a purchase being made, to prevent the liberty of exaggeration, which is too frequently taken by dealers in those animals, and which too often terminates to the serious injury of the purchaser.

It is to be much lamented, that men who entertain a proper idea of honour in all the common affairs of life, so soon as they become the owner of a horse, feel at liberty, without being sensible of doing violence to their morals, to knock off two or three years from his real age, and express themselves, with apparent delight, of services, gaits, and qualities, to which he never had any sort of claim or pretention; carefully keeping a secret every vice and defect to which he is subject. I do not pretend to say this is the case with all who exchange or sell a horse, but that it has often occurred no person will deny. If a fraud can be practised at all, it is sufficient reason for the inexperienced and unsuspecting to be placed on their guard. When a horse is offered for sale, I would advise the purchaser to ask one question, viz: Is he in all respects perfectly sound? Should a cheat be practised on you, under such circumstances, an action would lie against

the seller, and damages could be recoverable; but be your own judge, not permitting any declaration that may be made by the seller, to alter your opinion of form, age, condition, movements, action, &c. As the eyes of a horse are the most important organ, first let him undergo a strict examination; ascertain his age, examine his figure and action; guarding yourself against being too much pleased or fascinated with the appearance of a new object; view his feet and legs; large ridges on the hoofs, or very flat feet, discover a horse to be subject to founder: large gouty legs, with enlarged tendons indicate strains and other injuries. examine his hind legs, with great attention, just below the hock and inside the hind knee; if there is any unnatural prominence or knot, unlike the other knee, it wears the appearance of a spavin, which renders a horse of but little value. Splint, which appears on the inside of the fore legs, and wind-galls, upon the ancles, are unpleasant to the eye, but seldom produce serious lameness; they furnish plain proof that a horse has been serviceable, and are very seldom productive of any other injury than stiffness, as he advances in years. Ride yourself, for the purpose of trying his gaits and qualities; as a rider accustomed to a horse, by private signs, such as manner of riding, bearing on the bit, leaning forward or backward, holding the heels close to his sides, &c. &c. &c., can make a dull horse appear gay and spirited, a wild horse gentle, a stumbler clear footed, one that is blind appear to see, and a starting horse free from that great objection, &c. &c. Before mounting him, examine his knees, to discover if they are skinned, the hair off, or scarred; those are strong symptoms of his politeness to a fault. Ride with your bridle loose over any uneven ground: if he is in the habit of stumbling, he will very readily inform you:

then approach some object offensive to the sight; if he appears much alarmed, stopping suddenly, and attempting to turn round, paying but little respect to the bearing of the bridle, you may judge he has been long in the habit of that bad practice. Ride him in all his different gaits, to ascertain if they are smooth, easy, and agreeable; move him about a mile, out and back, in fully half speed; frequently stopping him suddenly to try his wind, also if he is spavined; if his wind has been injured, he will blow unnaturally; making a loud wheezing noise, with great difficulty of breathing. While warm, ride him in cold water above the belly; after which let him cool fifteen or twenty minutes, and if he is spavined, and has received temporary relief, by applications of any kind, the disease will make its appearance so plain, that you will discover evident marks of lameness. The spavin is often relieved for a time; and in a few instances has been permanently cured, by blistering, bathing with double distilled spirits, &c. The brisk exercise, &c. is intended to bring on a return of its effects, in case the animal should have had temporary relief from that distressing disease.

Having given such hints as I am persuaded will lead to the discovery of any material defects in a horse about to be purchased, I shall now proceed to the description of a horse that I consider elegant and fit for the saddle.

In order that he may have just claim to beauty and elegance, his head must be small, thin, bony, and tapering; his countenance lively and cheerful; his ears quick of action, high, erect, narrow, thin, and pointing together; his eyes large, round, full, and black-sparkling with cheerfulness, yet hushing his agitating passions into order and obedience; his nostrils large

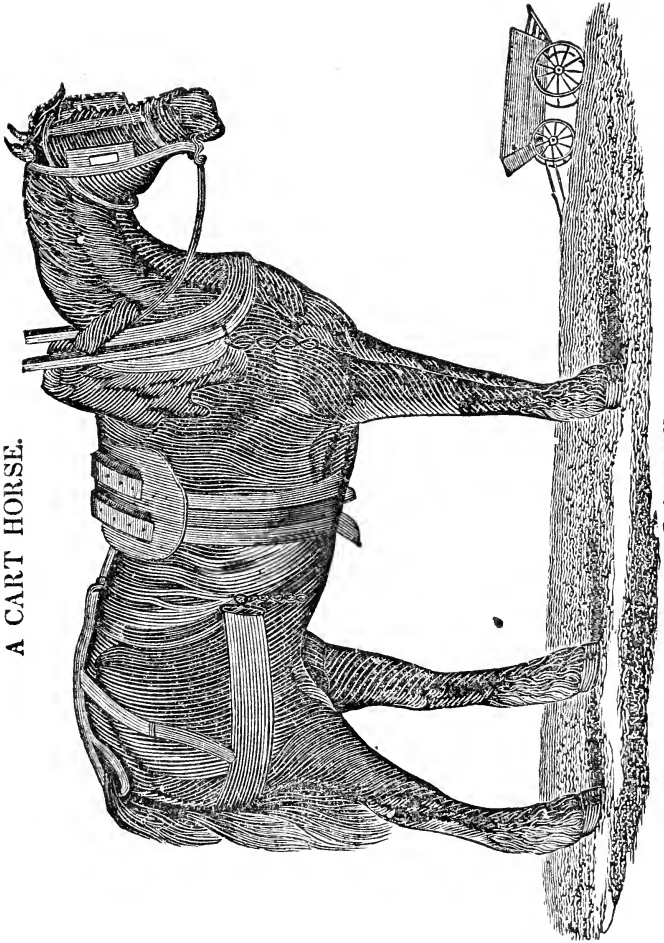
and expanded, and when in motion, disclosing a deep red colour; his brow and forehead smooth, and not too flat; his nose somewhat rising, of good turn, and a little inclined to the Roman shape; his neck long, thin, delicate, and arched, forming a beautiful gradation from the breast and shoulders; his mane half the width of his neck, thin and smooth; his shoulders high tapering, and thrown well back; his breast plump, full, and of moderate width; his fore legs straight, flat, sinewy, and thin; his arms large and muscular; his back short, and not too much swayed for strength and durability, but pretty even and straight; his body rather round and swelling than flat, and of proportionable size; his flanks plump and full, and the last rib approaching near the hip bones; his hips and buttocks full, round, and well covered with muscles; his chine broad; his tail well placed, and naturally or artificially elegant, which adds much to his figure and gay appearance; his thighs long, from the hip to the haunch bone large and bulging with muscles; his hocks broad, sinewy, bony, and clear of puffis; his hind legs from the hocks short, bending a little rather than straight, flat, and sinewy; his pasterns of moderate length, small and bony; his hoofs cupped, small, round, and smooth; his hind parts not tucked, but of easy turn and graceful slope; when mounted his appearance should be bold, lofty, and majestic; his eyes shining with intrepidity and fire; his movements light and airy as a phantom, with a fairy step, that would scarcely break a dew drop; his actions smooth and graceful; his colour should suit the taste of the purchaser, though a mahogany bay is certainly the best colour; his marks large, of irregular white, to light up the countenance, and at least two white legs, which will add much to his beauty—though it must be ac-

knowledged, that all parts of a horse that are white, are much more tender than any other colour. When a horse is rode by any person for you to judge of his gaits, you should have him moved towards you, from you, and finally by you, as you may have the opportunity of discovering, if there is any turning in and out about his knees and ancles, before or behind, which is very objectionable. A well shaped horse will track as true, or his legs will follow each other in as direct a line, as the wheels of a well constructed carriage.— For him to be considered a good riding horse, he should move with ease to himself, and pass over the ground with great rapidity. Hard steps, short going, and great apparent labour, is offensive to the sight, unpleasant to the rider, and fatiguing to the horse himself. With respect to the colour of horses, people differ very widely; a black horse, with white face and legs; a grey, or a mahogany bay, with white marks, when well kept, are all showy colours; but for actual service, experience has proved, that dark colours, without any white feet, are far preferable; for who ever recollects to have seen a black, sorrel, or bay horse, with a bald face and four white legs, distinguish himself on the turf, in four mile heats? I am inclined to believe there is no first rate race horse, of that description, within the United States.

I have, perhaps, stated some facts relative to horse jockeys, in a manner so plain and candid, as to draw from them their displeasure. My object is not to offend, but to instruct and be useful to those who want experience on the subject, for which this little book is designed.

The annexed engraving (See Frontispiece) presents my idea of an elegant saddle horse; by a reference to

A CART HORSE.



To face page 12.

which, the judgment of a purchaser will not only be benefited, but meet with considerable support.



CARRIAGE HORSES.

HORSES intended for a carriage or draft of any description, should be from five feet to five feet four inches high; though there are many excellent and truly valuable draft horses of much smaller size. The greatest attention should be paid to their habits, temper, quality, and disposition. A horse that has been once frightened in harness, never again is safe for that employment. So retentive are their memories, that they do not forget an alarm of that kind during their whole lives. For the want of experience on this subject, horses that have been frightened in harness have been hitched to carriages, which too often has been the cause of the untimely death of many amiable females and helpless children. Indeed, a pair of good and well matched, gentle carriage horses, is rarely to be met with; as so many good qualities, together with a similarity of age, colour, size, and marks, is required to make them complete and valuable. Their eyes should be good, carriage lofty, bodies proportionably large, breasts full and wide, their whole bodies heavily muscled; their heads, necks, and ears delicate; their legs large, sinewy, and bony; their pasterns short, and their hoofs moderately large, and not too flat. They should be free from starting, stumbling, and kicking;

and their dispositions patient, gentle, and obedient. It very often happens that horses are kept together as a match, on account of their colour and similarity of marks, when no respect is paid to their difference of form, spirit, and movements, which often differ as widely as the mettled racer from the dull cart horse. When thus badly matched, they would very soon be separated by a good judge, and nothing short of necessity should ever permit them to draw together. Carriage horses should carry good tails, naturally or artificially, which adds much to their gay and elegant appearance; presenting figures ready, apparently, to move upon the wind, whilst they are perfectly gentle and manageable. Horses of different colours, whose spirit, size, and movements are similar, are a much better match in harness than those of the same colour, with three or four inches difference in height; or one dull, and the other spirited; one young, the other old; one fat, the other poor; one with a bald face and white legs, the other with white legs; or one active, and the other clumsy.

I have thus taken up the time of the reader, to make him the better judge, and give him a correct idea of a bad match of carriage horses, which will assist him much in selecting those that are good. After being thoroughly satisfied about the shape, age, condition, &c., of a pair of carriage horses you may be about to purchase, it will be necessary, in justice to yourself, to try them in harness; though the seller will assure you they are as gentle as lambs, true as honour, and finally, the best pair of horses in the world; although it is possible for such a statement to be a fact, I would advise that a trial should be made, and the purchaser become his own judge; for which purpose have them hitched in a carriage, and driven several times up and

down the steepest hill that the road may cross, which is most convenient: if they have any tricks, or are not true draft horses, it can be readily discovered: next, for the purpose of discovering if they have ever been alarmed in harness, frequently open and shut the carriage door, also move and rattle the steps; if they have ever been frightened in harness you will very soon be compelled to desist; then by coming to their front, and with attention observing their ears and eyes, you will be informed to your entire satisfaction, if they are safe.

Horses that have been once alarmed in harness, so soon as they hear any rattling noise behind them, begin to grow restless, sinking or squatting behind, holding the head high, snorting, fetching long breaths, moving the ears with great quickness, at the same time showing the whites of their eyes. Let me warn the reader against the purchase of such horses; they are unfit and unsafe for the use of a family. Horses for harness, that are fiery and fretful, are very objectionable, and should always be avoided; but great care should be taken to distinguish between animals of this description, and those that are eager and spirited; the former begin to prance and tret the moment they are out of the stable, until they exhaust themselves with fatigue; but the latter endeavour only to be first in the chase, or foremost in the field, and are truly valuable; possessing those qualities that resemble prudence and courage; the others, intemperate heat and rashness. Whenever carriage horses are driven, they should be moved off fifteen or twenty steps in a slow walk, without the cracking or flourishing of a whip, which is so much the custom, and which is very frequently the cause of high tempered horses refusing to draw. After which their speed may be quickened to whatever gait you may prefer, by the use of some kind word.

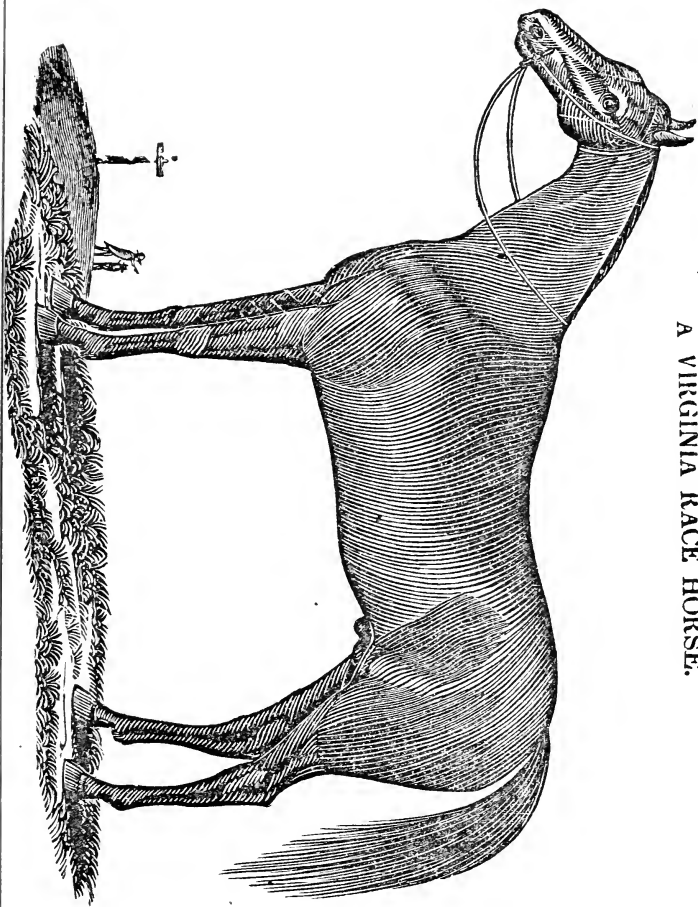
to which all horses should be accustomed. It is very much the practice with drivers to leave their horses standing in a carriage, without any person to hold them, for hours together. Having seen the worst of consequences result from this practice, (and with horses under the character of being gentle,) I would recommend that drivers should never give up their reins until they are prepared with some person sufficiently strong to hold them. By using such precaution, the overturning and breaking many fine carriages, and the ruining for ever many valuable and elegant carriage horses, would be avoided.



RACE HORSE.

It is a remarkable fact, that horses run in all shapes. But most generally, those excel upon the turf, that are of the following form: head and neck thin, small, and delicate; eyes large, plump, and full of expression; nostrils wide, red, and expanded; throttle large; shoulders high, thin, and running very far back; breast plump, full, and wide; body long, round, and rather light than heavy; back short as possible; thighs long, large, full, and bulging; fore arm large and swelling towards his breast; hocks broad, strong, and bony; legs of moderate size, thin, flat, and sinewy; pasterns rather long and small, than otherwise; feet of proportionable size to the balance of his form; though, of the two extremes, small is the best; he should be nervous, tractable, and of good spirit, and he should be from five feet to five feet four inches high. Such a horse, well managed, kept and placed in races, will seldom fail to distinguish himself on the turf.

A VIRGINIA RACE HORSE.





KEEPING.

THE keeping a horse for a race is attended with much trouble, and requires great attention: but is more simple than is generally believed by persons wanting experience on that subject.

A large majority of grooms, even to the present day are in the habit of giving to race horses large quantities of physic, (though the number engaged in this practice has been diminished within the last ten years,) and for the sake of those very valuable animals, I hope ere long, such an injurious practice will be entirely abolished. All the medicine on earth will never give to a horse speed and bottom, that is naturally deficient in those respects; and if he is affected at all by its use, it must operate to his disadvantage.

The plainest and simplest mode of keeping horses, has proved much the best, to all who have ventured, in defiance of old opinions and customs, to use that course. When a horse is in health, the medicine generally given by grooms, has the effect of relaxing the muscles, enfeebling the system, and expanding the pores of the skin. I am clearly of opinion, that those large doses, which are so often given, never cause a horse, when running, to fetch a longer breath, brace his muscles, added to the elasticity of his tendons, invigorate his system, or gave him, in any way, extra powers to perform the task assigned him; but on the contrary, are frequently the means of throwing a horse out of order, that in all probability, under different treatment, would have proved successful, if not master on the turf: indeed, this has sometimes been proved by the change of owners, and when a good

horse has fallen into the hands of one that has observed plain and simple treatment—the horse that previous to the change never was more than second or third best, has run with more than anticipated success.

But many old and ignorant grooms who have never been benefited by experience, and all the knowledge they possess have been handed to them by persons equally ignorant with themselves, are under a belief, that unless a horse swallows a certain number of wind balls, that it is impossible he can win a race; added to which, they are extremely superstitious, and some, even at the present day, confide in tricks and witchcraft. It is to be much regretted that a good horse should ever fall into the hands of such blockheads.

The first thing necessary in the keeping a race horse is, a good log stable, about fifteen feet square: then provide a plenty of good and sweet old corn, fodder, and oats, and a sufficient quantity of clean and dry straw, to change his bed every two or three days.

Most horses, when first taken up for the purpose of being kept, require bleeding; which a groom can always be a judge of from the appearance of the animal. Good cloths, girts, &c. should be provided and kept on the horse, except at the hours for rubbing, which should be regularly three times a day; in the morning, and evening after practice, and at twelve o'clock; for which purpose a curry-comb, brush, straw and a large woollen cloth, must be provided and well used. Good rubbing assists in putting a horse in order, and places on his skin a beautiful gloss. His legs must be washed three times a day in clear cold water, after which they must be rubbed dry with straw, and the naked hand rubbed over the ancles and pasterns, until a small degree of warmth is felt. The stable should be kept perfectly clean.

A horse should be given such practice as he is well able to bear. As those animals frequently differ in every respect so widely from each other, it is impossible to lay down any rule that should govern, relative to the speed or quantity of practice necessary for horses in training. I will only remark, that a horse should be practised in a moderate gallop, the distance he is intended to be run, moving briskly every time he passes the stand, and for a short distance on the back of the ground: he then should be walked about a mile, and again galloped in manner first directed. Some fleet and delicate horses require very little practice indeed; while other hardy and hard bottomed horses require and can bear very hard practice. But the appetite of a horse is the best criterion, as relates to that subject.

If a horse refuses to eat, it is an evidence that his practice is either too hard or too quick; when he eats heartily, it is a proof that he is able to bear what is given him. When a horse is first taken into keeping, his allowance for the first two or three days, should be rather short; which should be offered four times a day. His exercise should be walking, for the first three or four days; two or three times the distance, or round the course of his contemplated race; after which time, his food may be increased with his exercise, and he may be regularly fed with from two quarts at a feed to four quarts. His food should be often changed and prepared thus: his hommony (Indian corn ground coarse) should be first winded, then thrown into clean water, so as to separate the part that is nutritious from the husk and chaff; the oats should be lightly beaten in a common hommony mortar, to separate them from the hull or chaff, which may be blown off; his fodaer should be stemmed whenever it is discovered he now

'oo much belly. A horse never should be drawn suddenly, as nothing is more weakening.

The best medicine on earth, that can be employed in keeping of a horse, to give him wind and bottom, as the grooms term it, is good and sweet food. A greater proportion of old oats, hay, or hommony, opens the bowels; and a large proportion of fodder and oats, when prepared in the way directed, has the reverse effect; so that by using food that actually contains nourishment, and will certainly benefit your horse, you may place him in whatever kind of order you think proper, without using those medicines which have a certain tendency to weaken and relax him. About two mashes during the time of keeping, is very beneficial; the first as soon as you commence; the second, about eight days previous to his running; composed of one gallon of bran, one table spoonful of flour of sulphur, and one tea spoonful of saltpetre. Most grooms are in the habit of giving one, two, or three sweats, during the time of keeping; which method of hardening the flesh I am much opposed to. If a horse is too gross, gradually increase his exercise, which will have the desired effect. Whenever a horse has to undergo one of those sweats, he is so much weakened and relaxed, as to require at least one week to recover his strength. Should a horse, in keeping, lose his appetite, it can readily be restored, by a single innocent drench, composed of a quarter of an ounce of asafoetida, one table spoonful of salt, and one quart of sassafras tea. Good food, regular feeding, moderate exercise, and strict attention to rubbing, are of much more importance and benefit to a horse in keeping, than the administering of large doses of physic, which his nature does not require.

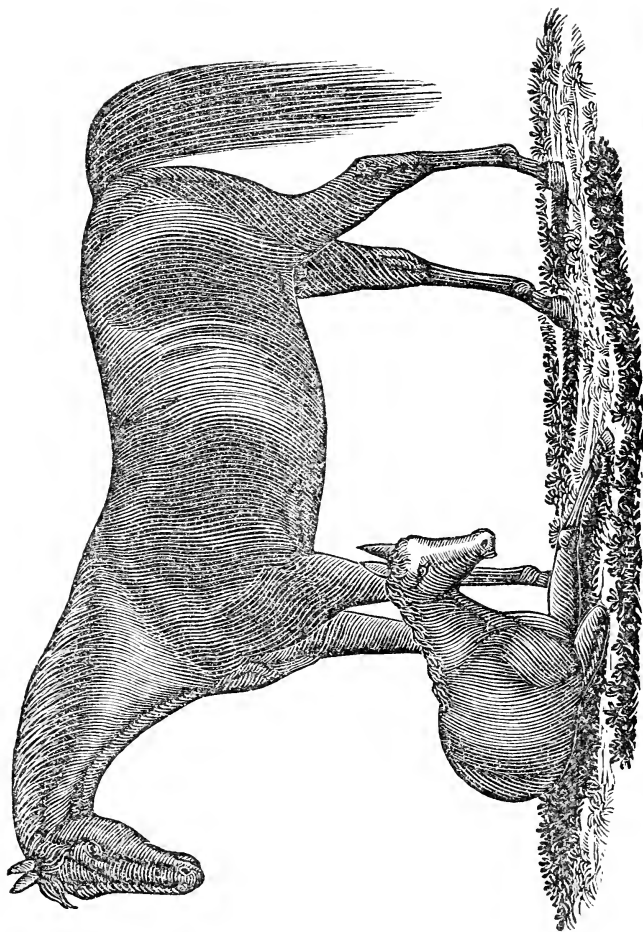
When a horse is well kept, he will not appear very

fat, but his flesh will be very firm and hard : his legs and ancles must be perfectly cool, and not puffed or swelled ; his eyes should be lively, and countenance cheerful : he should possess no bad habits, but be tractable, gentle, and manageable ; his actions smooth and graceful ; he should be taught patience ; and often practised in starting around the race course, never permitting him to go off, until the word GO is given. Many advantages result in a race, to a horse, being properly broke in starting.

After a horse has gone through his practice, and has been well rubbed, &c. &c. his feet should be stuffed, (during the time of his standing in the stable) with fresh cow manure, or clay and salt, to prevent his ancles from swelling or being heated ; his legs should be bathed once a week, with equal parts of old peach brandy and fresh butter, or sweet oil and vinegar, stewed over the fire until well mixed, and applied warm as the hand can bear it.

Whenever a horse commences his brisk exercise, the under part of his ancles should be occasionally greased, to prevent their cracking and the scratches being produced. The heels of most young horses crack, during their exercise, unless this precaution is used ; fresh butter, sweet oil, or hog's lard, answers well for that purpose.

The subject of keeping horses is so extensive, that to treat fully on it, would require a book at least the size of this ; the reader, therefore, must be content with the few hints and few pages I have devoted to this subject.



strict and pointed attention should be paid to the orders given, and they rigidly adhered to.

A rider should bear a little forward, steadily as possible, and without altering the attitude of his body, when whipping, pushing, or running at his ease, taking great care to remain steady in his stirrups, holding his elbows close, and his hands low.

A rider, after running his heat, should never dismount, or give up his horse to any other person, until it is his turn to prove his weight, and is directed to come to the stand.



THE

BREEDING AND RAISING OF HORSES.

THE breeding and raising of horses, to most persons, is a very amusing and pleasing task; but it is attended with much trouble and expense, unless well managed, and then it becomes not only a subject of profit, but is well worth the attention of any person, whose situation will admit of it, for the purpose of making a fortune.

The raising of cold blooded or common horses, is generally a disadvantage to any person, being neither interesting or profitable. A colt three years old, of the above description, seldom costs the owner less than one hundred and twenty dollars; and when he makes a sale, twice out of three times that sum cannot be obtained; consequently there is a loss, independent of trouble. But colts, three or four years old, from the best stock in the United States, of large size and

BREEDING.

having distinguished themselves on the turf, have commanded from one hundred to one thousand pounds.!

By raising and running such horses, large sums of money have been accumulated in the United States, and particularly in Virginia, where the blood, speed, and beauty of horses, are equal to any in the world.

Much has been stated by English authors, on the subject of blood, form, and speed of the English horses; particularly Dorimant, Bay Malton, Eclipse, High-flyer, Matchem, Shark, Childers, &c. &c. &c. But could the blood, form, speed, and bottom, of our American horses, Brimmer, Chanticleer, Leviathan, Virago, Surprise, Florizel, Potomac, American Eclipse, &c. &c. &c. have been contrasted with them, I am induced to believe they would have had the same claim to the page of record and superior performance.

True it is, that of Flying Childers it is stated, that he run a mile in a few seconds over a minute. My regard for the life of every human being, particularly a valuable race rider, induces me to wish our horses may never perform the mile in that time, though we have several amongst us whose speed is unknown, although they were on the turf several years, contending with very fine race horses.

I must confess, that for a horse to run a mile in a minute, or eighty-two and a half feet in a second, (as stated) surpasses any idea that I have entertained of the velocity that a horse was capable of.

In order to raise a beautiful and good racer, a stud should be made choice of, that will be a good cross, and of the best blood; not less than five feet two, though five feet four inches high, is a preferable size. He should be well proportioned, elegantly formed, of mahogany bay colour, and clear of all defects. particu

lany spavin and blindness: and should not only have proved himself in possession of speed on the turf, but bottom also; and should be a sure foal getter.

A mare should be made choice of, not less than five feet high, with a delicate head and neck, great length of body, large belly, and above all other things, one that has proved herself, by her colts, to be a good breeder.

When you commence breeding with a mare of this kind, you are almost certain of raising a valuable colt. But when you commence with one untried, you run a great risk of losing time and raising a horse of the 120 dollar price, unless the mare, or stock from which she originated, was first rate and remarkable for their fine colts. Indeed there appears to be the same similarity in the blood of horses that exist in men, as respects their good and bad qualities, shape, &c. &c. We find vice common throughout some families, while we see virtue reigning in others. One breed of horses, under every care and attention, will only raise you a coarse horse or pony; whilst good blooded horses, even half starved and under every disadvantage, will show strong marks of beauty, activity, and size; and after winning from his master kind treatment, often becomes the champion of the turf. I have known several first rate race horses that were once plough and draft horses.

A brood mare, that has produced one or two good racers, from a good cross, in all probability will, at any time produce one, when under similar advantages. When a colt is foaled early in the spring, he will be under every benefit that can be derived from size, strength, and age; consequently, it would be advisable to put a mare to horse at such time as would produce a colt about the fifteenth or twentieth of April. A

mare generally goes with foal eleven months and as many days as she is years old. A colt foaled in April, when three years old would have to carry no more weight in a race field than one foaled in August; which would give to the one first foaled a difference of three months of age, and of equal blood and under similar advantages. The one first foaled ought very certainly to prove best on the turf, from three to seven years old.

After your mare has been put to the horse of your choice, she should not be confined during her pregnancy, but a house or shed about twelve feet square, should be built for the purpose of sheltering her from the rain or bad weather; the south side of this house should be left entirely open, so that the mare might come in or go out at pleasure: and a manger and rack should be confined in it for the purpose of feeding. A good bed of straw, and that frequently changed, will add much to her comfort, and she will be induced to sleep under the shelter if the litter is kept clean.—Adjoining this house there should be a lot, enclosed with post and railing, containing from one to four acres of ground, clear of snags, grubs, and stumps; in which the mare should be confined about two or three weeks previous to her foaling: she will then be convenient to assistance, should any be necessary.

Mares frequently produce colts at fourteen or fifteen years of age, and sometimes twenty; but from five to twelve years of age, from experiments made, appears to be the most valuable part of a mare's life for raising colts. Experience has also proved the great advantage resulting to the form and size of a colt, from letting him get thin upon grass alone, two or three times previous to his being three years old; after which time he may be constantly pushed as much as possible.

When the dam and sire of a colt are small, it is to

be presumed a colt produced by them will make a small horse, although there may be no objection to the blood; and if he makes a race horse, it will be of the unprofitable kind. He may be a winner at three years old; at four years old, second best; and being too small to carry weight, he never can win again. Such a horse will not command a high price with a judge of horses, as it is evident that a large horse, with the same weight, will beat a small one, when they are equal in all respects except size. Indeed, for the purpose of draft or riding, a large horse will command double the sum of a small one, which plainly proves the importance of breeding from a large stock.

When a colt arrives at the age of two and a half years, it is time he should be handled, and taught the use of the bit. It is of great consequence he should be first gentled by a person who well understands the management of horses, to prevent bad habits: as first impressions are never entirely removed from man or beast.

{ *The following is the mode of raising Blooded Horses, as pursued by Wm. E. Broadnax, of Brunswick County, Virginia.* }

[FROM THE AMERICAN FARMER.]

MODE OF RAISING BLOODED HORSES.

“In the first place, be particular in selecting a good stock to breed from. When the mare is near foaling, let her be to herself, and if early in the season, let her have a good roomy stable to foal in; and in good weather, let her and her colt be turned into a lot, (of wheat I prefer.) Wean the colt the first of October in a stable, until it is done snickering after its dam; then turn it in a lot; if you have more than one, they will do best together.

“Stable them at night, and turn them out in the day except in very bad weather: force them all you can the first winter. To do this, their principal food should be cut oats moistened with a due proportion of corn meal sprinkled over and mixed with them. Most foals are apt to be too delicate; forcing them, and keeping them warm at night, will increase the size of their limbs in proportion to the weight of their bodies. After they are one year old, they should not be kept so fat, nor yet permitted to get poor. A stud colt, which is intended to be kept as such, should be separated from other horses at a year old, and stabled of nights; his rack and manger should be so high as to strain him a little to get food; the windows of the stable should also be high, as he will be looking out at them: by these means his shoulders will be thrown back, and his withers raised. If it be wished to increase his quarters, enlarge his muscles, and other material parts, keep him in the stable frequently, for several days together, which will animate him; then turn him out in

a lot, and encourage him to run and exert himself all you can, as his parts will acquire size and strength in proportion to the use made of them.

“I would recommend a mare of good form and thorough blood, though she cost the most, because her colts would cost no more to raise them than those from an ordinary mare, and would probably sell for more than three or four times as much. The reason I would wean in a stable is, that in the usual way of weaning in cornfields, &c. the colts run themselves poor before they are weaned. I prefer wheat lots for mares and colts, because they like it better than any thing else, and I think it agrees better with them. I find oats made use of as above stated, not only the most healthy and best, but also the cheapest food for mares and colts. In pursuing the course which has been laid down, I obtained the following results :

“I selected a mare which I knew to be of good stock, but from improper raising was only four feet six inches high, and very delicate : The first removal from her was four feet ten inches ; the second removal five feet ; the third was five feet two inches ; the fourth was five feet six inches.”

RAISING OF COLTS.

The following answers were returned by William R. Johnson, to questions propounded by J. Marshall, of Fauquier Co. Va.

“SENATE CHAMBER, February 4, 1829.

1. Keep the colts in pretty good order, not too fat, until they are too years old, then break them gently.

2. Keep them in lots, it does not matter as to size, taking care not to allow them to see other horses more than possible.

3 and 4. Grass lots are best, and short grass.

5. Dry food mostly—when young, cut oats.

6. Give corn in the winter; oats in the summer; not more at a time than they eat clean. When they are once fat very light feeding is best.

7. It is not at all necessary to rub them until they are two years old.

8. Wean the colts at about six months old.

Should the above answers to your questions not be sufficiently explicit, they will be with great pleasure added to.

Respectfully,

WILLIAM R. JOHNSON

[FROM THE AMERICAN FARMER.]

THE BLOODED HORSE.

How to choose a race horse by his external appearance, and to be a judge of his symmetry by angular demonstration.

RULES.

1st. Draw a base line from the stifle joint along the bottom of the chest to the extreme point of the elbow, and to the shoulder-blade joint.

2dly. Draw a line from the curb or hock by the hip joint above the back, to an imaginary point.

3dly. Draw another line from the point of the shoulder, ranging with the shoulder, and passing above the back, until it intersects the line at the imaginary point.

4thly. Draw a line from the intersecting point of the shoulders, giving the same declension until it intersects the base line.

5thly. From the stifle to the point of the buttock thence to the hip joint, thence declining to the stifle.

6thly. Draw a line from the hip to the base line right angular declension, then to the shoulder up to the chest.

7thly. Then draw a straight line, regardless of the curve of the back, to a straight line intersecting at the shoulder at the beginning of the crest.

8thly. Then take a line from the point of the shoulder, and angular degree, ranging with the shoulder-blade to the top of the crest.

9thly. Then, regardless of the rising of the crest.

draw a straight line from the top of the shoulder-blade to intersect with the point of the former line.

Thus the real symmetry of a grand and beautiful horse, possessed with muscular powers and strength, is formed by a right-angled triangle; and the farther from it a race horse's form is, the less pretensions that horse has to beauty, speed, bottom, or lastingness, ability to carry weight, or activity.

A thick, upright shoulder, is a very certain mark of a "stumbler," and is fit for no use whatever but the slow draft.

A low coupling in the back, is a true mark of weakness; it denotes want of strength, lastingness, ability to carry weight, or speed.

A low loin, is a certain mark of weakness, and a weakly and washy constitution.

But a rising loin, of ability to carry weight, speed activity, and lastingness, and a good constitution, symmetry, beauty, and muscular strength.

A race horse's legs cannot be too short.

A great declivity, and thin shoulders, denotes speed.

A narrow breast, weakness

A horse's breast bone, formed like that of the rabbit, denotes also speed, and it is the best form for a race horse.

A short, broad hock, denotes strength: a broad stifle well let down to the curb or hock, denotes bottom or lastingness, strength, and activity.

There are not two race horses in five hundred, properly formed in the knees; which should be small, divested of superfluous appendages, and strong; they denote activity and strength.

A lax, bending pastern, denotes also speed; a long horse is preferable to a short one, because he can cover a great deal of ground, and can bear pressing better and longer.

The race horse, upon the whole, whose form in general, is composed of the essential properties of the following animals, viz. the rabbit, grey hound, and ostrich—is the best.

GORWOOD.

December 6, 1827.



The following is the English mode of management and working of Race Horses.

In the managing and working of race horses, three things are to be considered: the preparation of the horse, the conduct of the rider, and the after treatment of the horse. The preparation of a race horse for running a race is not the work of a few days, if there be any great dependence on the success. A month at least, is required to harden his muscles in training, by proper food and exercise, and to refine his wind, by clearing his body to that degree of perfection that is attainable by art. It is first necessary to ascertain correctly the present state of the horse, as whether he be low or high in flesh; and in either case, a proper estimate should be formed of the time and means required to bring him into true running condition.

If a race horse be low in flesh, it is necessary to judge of the cause of such state, and to act accordingly. It is to be remarked, that spices are less to be depended on for this purpose than generous food, as malt mashes; and if any thing of the kind be used, let it be the simple cordial ball. Feed frequently, and by little at a time: while he is thus low, let his exercise be walking only, and by no means spare his water, or he will become hide-bound: carefully watch him, that full feeding may not disagree by making his heels swell, or his coat unthrifty; and if such appearances occur, mash him and begin his scourings, otherwise abstain from physic until he is in better health. As he improves in condition, increase his exercise, but not to such a degree as to make him sweat: his food must now be the best oats and beans, with wheaten or barley bread; the beans and oats are to be put into a bag and beaten until the hulls are all off, and then winnowed clean; the bread instead of being chipped in the common way, is to have the crust clean off.

If the horse be in *good flesh and spirits* when taken up for his month's preparation, cordials are altogether unnecessary; and the chief business will be to give him good food, and so much exercise as will keep him in wind, without over-sweating or tiring his spirits.—When he takes larger exercise afterwards, towards the end of the month, it will be proper to have some horses in the place to run against him. This will put him upon his mettle, and the beating them will give him spirits. This, however, is to be cautiously observed, that he has not a bloody heat given him for ten days or a fortnight before the plate is to be run for; and that the last heat that is given him the day before the race, must be in his clothes: this will make him run with greatly more vigour when stripped for the race, and feeling the

cold wind on every part. In the second week, the horse should have the same food and more exercise; and in the last fortnight he must have dried oats, that have been hulled by beating; after this jockeys wet them with the whites of eggs beaten up, and then laid out in the sun to dry; and when dry as before, the horse is to have them: this sort of food being considered by them as very light of digestion, and very good for the creature's wind. The beans in this time should be given more sparingly, and the bread should be made of three parts wheat and one part beans, or of wheat and barley in equal parts. If he should become costive under this course, he must then have bran-water to drink, or some ale and whites of eggs beaten together; and keep his body moist. In the last week all mashing is to be omitted, and barley-water given him in its place; and every day, till the day before the race, he should have his fill of hay; then he must have it given him more sparingly, that he may have time to digest it; and in the morning of the race day, he must have a toast or two of white bread soaked in ale, and the same just before he is led out of the field. This is an excellent method, because the two extremes of fulness and fasting are at this time to be equally avoided; the one heating his wind, and the other occasioning a faintness that may make him loose. After he has had his food, the litter is to be shook up, and the stable kept quiet, that he may be disturbed by nothing till he is taken out to run.

In the choice of a rider for winning a race, it is necessary, as far as possible, to select one that is not only expert and able, but honest. He must have a very close seat, his knees being turned close to the saddle skirts, and held firmly there; and the toes turned inwards, so that the spurs may be turned outwards to

the horse's belly ; his left hand governing the horse's mouth, and his right the whip. During the whole time of the race, he must take care to sit firm in the saddle, without waving or standing up in the stirrups. Some jockeys fancy the last a becoming seat ; but it is certain that all motions of this kind do really incommode the horse. In spurring the horse, it is not to be done by sticking the calves of the legs close to the horse's side, as if it were intended to press the wind out of his body ; but on the contrary, the toes are to be turned a little outwards, and the heels being brought in, the spurs may just be brought to touch the side. A sharp touch of this kind will be of more service toward the quickening of a horse's pace, and will sooner draw blood than one of the common coarse kicks. The expert jockey will never spur his horse until there is great occasion, and then he will avoid striking him under the fore bowels, between the shoulders and the girt ; this is the tenderest part of a horse, and a touch there is to be reserved for the greatest extremity.

As to *whipping the horse*, it ought always to be done over the shoulder, on the near side, except in very hard running, and on the point of victory ; then the horse is to be struck on the flank with a strong jerk ; for the skin is the most tender of all there, and most sensible of the lash. When a horse is whipped and spurred, and is at the top of his speed, if he clap his ears in his pole or whisk his tail, it is a proof that the jockey treats him hard, and then he ought to give him as much comfort as he can, by sawing the snaffle backwards and forwards in his mouth, and by that means forcing him to open his mouth, which will give him wind, and be of great service. If there be any high wind stirring in the time of riding, the artful jockey will let his adversary lead, holding hard behind him,

till he sees an opportunity of giving a loose ; yet in this case he must keep so close behind, that the other horse may keep the wind from him ; and that he, sitting low, may at once shelter himself under him, and assist the strength of the horse. If the wind happen to be in their back, the expert jockey is to keep directly behind the adversary, that he may have all the advantage of the wind to blow his horse along, as it were, and at the same time intercept it in regard to his adversary.

When running on level smooth ground, the jockey is to beat his horse as much as the adversary will give him leave, because the horse is naturally more inclined to spend himself on this ground ; on the contrary, on deep earths, he may have more liberty, as he will there spare himself.

In riding up hill the horse is always to be favoured, by bearing him hard, for fear of running him out of wind ; but in running down hill, if the horse's feet and shoulders will bear it, and the rider dares venture his neck, he may have a full loose. If the horse have the heels of the rest, the jockey must always spare him a little, that he may have a reserve of strength to make a push at the last post.

On the jockey's knowing the nature of the horse that is to run against him, a great deal depends ; for by managing accordingly, great advantages are to be obtained : thus, if the opposite horse is of a hot and fiery disposition, the jockey is either to run just behind him or cheek-by-jole with him, making a noise with the whip, and by that means forcing him on faster than his rider would have him, and consequently, spending him so much the sooner : or else keep him just before him in such a slow gallop that he may either overreach, or be

treading on the heels of the fore horse, endanger tumbang over. Whatever be the ground that the adversary's horse runs worst on, the cunning jockey is to ride the most violently over; and by this means it will often happen, that in following he either stumbles or claps on the back sinews. The several corrections of the hand, the whip and the spur, are also to be observed in the adversary, and in what manner he makes use of them: and when it is perceived by any of the symptoms of holding down the ears, or whisking the tail, or stretching out the nose like a pig, that the horse is almost blown, the business is to keep him on to his speed, and he will be soon thrown out or distanced. If the horse of the opponent looks dull, it is a sign his strength fails him; and if his flanks beat much, it is a sign that his wind begins to fail him, and his strength will soon do so too.

The after management of a horse that has run, includes the treatment between the heats, and the treatment after the race is over. After every heat, there must be dry straw and dry cloths, both linen and woollen, ready to rub him down all over, after taking off the sweat with what is called a sweat-knife; that is, a piece of an old sword blade or some such thing. After the horse has been well rubbed, he should be chafed all over with cloths wet in common water, till the time of starting again. When it is certainly known that the horse is good at the bottom, and will stick at the mark, he should be rode every heat to the best of his performance; and the jockey is, as much as possible, to avoid riding at any particular horse, or staying for any, but to ride out the whole heat with the best speed he can. If, on the contrary, he has a fiery horse to ride, and one that is hard to manage, hard mouthed, and difficult to be held, he is to be started

behind the rest of the horses with all imaginable coolness and gentleness; and when he begins to ride at some command, then the jockey is to put up to the other horses; and if they ride at their ease, and are hard held, they are to be drawn on faster; and if it be perceived that their wind begins to rake hot, and they want a sob, the business is to keep them up to that speed; and when they are all come within three quarters of a mile of the post, then is the time to push for it, and use the utmost speed in the creature's power.

When the race is over, the horse is immediately to be clothed up and rode home; and immediately on his coming into the stable, the following drink is to be given him: Beat up the yolks of three eggs, and put them into a pint and a half of sound ale, made warm; and let it be given with a horn. After this, he is to be rubbed well down, and the saddle-place rubbed over with warm water and vinegar, and places where the spurs have touched, with the same; after this he should have a feed of rye bread, then a good mash, and at some time after these as much hay and oats as he will eat. His legs, after this, should be bathed some time with a mixture of vinegar and water.



HOSTLER.

No situation that a servant can be placed in, requires more activity, sobriety, strength, attention, and industry, than that of an hostler. And how often do we see weak, lazy, careless, crippled, and even extreme old men, worn out with age and infirmity, placed in that employment? Indeed, those are often made

choice of that are unable to perform labour of any description. Nothing can be more agreeable to a fatigued traveller, than to place his horse in possession of every pleasure, every comfort possible, after his having faithfully performed a hard ride, or on a journey, which he cannot have the opportunity of doing, unless a fit person is selected for an hostler.

Many fine horses and stables have been destroyed by carelessness. Hostlers that smoke pipes or segars, are unfit for that employment.



STABLES.

NOTHING conduces more to the health of a horse, than a good and wholesome stable. It should be built upon a high, airy, and firm situation, that the horse, in bad weather, may come in and go out clean. No animal delights more in cleanliness than the horse, or to whom bad smells are more disagreeable and pernicious. Great attention should be paid to the removal of all offensive and putrid matter, to prevent the farcy and other troublesome and distressing diseases, which frequently proceed from such neglect. A log stable is preferable to any other, on account of its admitting a free circulation of air in summer; and by the use of slabs or straw in winter, can be made warm and comfortable. Opposite to each stall there should be a lattice or window, with a shutter; by which means you can, at pleasure, either welcome the cheering breeze, or bar out the threatening storm. The rack should be smooth, high, and firmly fastened to the wall; which will prevent a horse injuring his eyes, skinning his

face, and doing himself other injury when feeding. The upright pieces in a rack should be four, or four and a half inches apart, to prevent long food from being unnecessarily wasted. The halter should never be tied to the rack, (several fine horses having been ruined by such carelessness,) but should be passed through a ring in the manger, and confined to a longer or smooth piece of wood, weighing about a pound. With a halter of this description, there is no danger of a horse's hanging, alarming, or injuring himself. A stall should be four and a half or five feet wide, which will allow him to lie down with comfort. The stable floor should be planked, to make the coat of hair show to advantage; but a dirt floor is far preferable, when a horse is wanted for actual service: there is a moisture received by the hoof from the earth, which is absolutely necessary to make it tough and serviceable. Either kind of stable floors should be a little raised towards the manger, to turn the urine from the stall, which produces an unpleasant smell, and (when permitted to stand a length of time) very unwholesome vapours. When the size of a stable is calculated for several horses, the partitions between the stalls should be neatly and smoothly planked low enough to the floor, to prevent the horse when lying down, getting his legs through, and high enough at top to prevent them from smelling, biting, and molesting each other. A plentiful bed of clean, dry straw affords, to a fatigued or travelling horse, as great a welcome as his food, and is as necessary in a stable as the ritchfork, curry-comb, and brush.

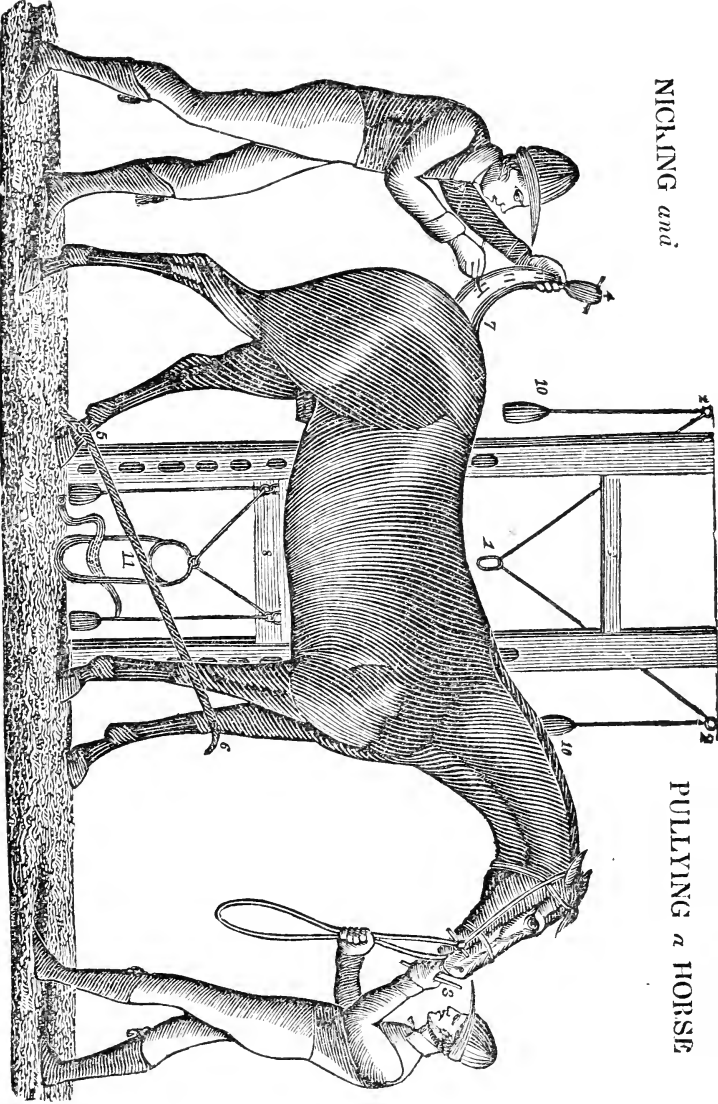
NICKING.

NICKING a horse has been generally believed to be attended with much difficulty, and to require great ingenuity and art to perform the operation. The nicking alone, is by far the easiest part, as the curing and pulling requires considerable attention and trouble. Nicking is an operation performed for the purpose of making a horse carry an elegant artificial tail, which adds much to his beauty and value. A horse may be finely shaped, even without fault, except carrying a bad tail, and he will not command a larger sum than one of very loose and ordinary shape elegantly nicked. One thus operated on, will have an appearance of gaiety, sprightliness, and life, which cannot be given by art in any other way; indeed, it very frequently happens the tail sells for one fourth the value of the horse, which argues strongly in favour of the operation being performed on every tolerable likely horse, that is naturally deficient in that respect.

Some are of opinion, and particularly our plain, good old farmers, who are in the habit of raising fine horses, that nicking is injurious, weakening the back, unstringing the tendons, relaxing the muscles about the hind parts, causing a horse frequently to fall and sometimes to catch upon their ancles behind, almost breaking the rider's back; in all of which they are entirely mistaken, and would readily be convinced of the fact, if they were to study the anatomy of the horse. Every tendon, muscle, nerve, artery, &c. that is separated in nicking, is always cut in docking; and we do not find it the result of experiment, that a horse with a long tail is more durable, stronger, rec

NICKLING *and*

PULLYING *a* HORSE



100 East Centre St.

from catching or sinking behind, than a horse that has been docked. Nicking will never make a bad horse a good one, or a good horse a bad one.

The opinion unfavourable to nicking, no doubt, has taken its rise from many delicate, weak, long-legged horses being nicked for the purpose of selling them. When the operation succeeds well, the horse assumes a new appearance, being more like a dancing master than a grave digger, after which he will continue to practise his old habits of catching behind, or making a bow, although he appears as if he could glide upon the wind. This elegant tail causes them to forget this is the same tender and weak horse that was in bad habits before he was nicked; and almost proves, without reflection, that nicking is the cause of his apparent weakness. Indeed if such opinions were founded on fact. all horses that had been nicked, would fall and catch behind, whenever they had to descend a small hill. I have never known an instance of a horse catching behind after being nicked, that was not in the habit previous to the operation being performed.

Before I describe the operation of nicking, it may be necessary to inquire into the effect, or how the elevation of the tail is brought about. In order to do this, and judge of the operation with propriety, we must consider the tail elevated or raised by one set of muscles, ending in large tendons, and depressed or drawn down by another; the muscles and tendons that elevate the tail, are stronger and more numerous, and nearer to the bone than those that depress it; they are closely connected to the bones of the tail by fleshy fibres, and terminate in strong tendons at the extremity. The tendons that throw down or depress the tail, are two in number, and may be found within a

quarter of an inch of the outer sides of the tail, next to the hair. There are three arteries; two large, on the outer side and immediately under the tendons, and one in the centre between the two nearer the bone, all running into a longitudinal direction, and decreasing in size to the extreme end.

To perform the operation of nicking, it is first necessary the horse should be well secured, to prevent his kicking or doing other injury; a twitch is to be put on his upper lip, but not so high as to prevent his breathing; a cord is to be made fast to the fetlock of one of his hind legs, thence carried forward and made fast to his fore leg above the knee, which will effectually prevent his doing injury during the operation.—[See *Plat'e.*]

Being now confined, you are ready to commence the operation, which chiefly consists in a transverse division of those depressing tendons of the tail, and such a position afterwards as will keep their extremities again from coming into contact; so that an intervening callous fills up the vacuity, and elevates, crests, and props the tail. There are three different modes of nicking, all of which I will proceed to explain, giving an opportunity to any person, about to perform the operation, to make their selection.

To make a horse carry an elegant tail, is attended with some uncertainty, as much depends upon the spirit, disposition, form, size of the bone of the tail, &c. &c. &c. A horse of good spirit, tolerable shape, and a small bone in the tail, can be made to carry an elegant tail with the greatest ease; particularly if he carried a tolerably natural tail. But a dull, leather-headed, flop-eared horse, with a remarkable large bone in his tail, will set you a task, although you may break

the bone in two or three places—indeed there is so much difference in horses, that some judgment must be exercised about the mode best to be adopted to the accomplishment of the object in view.

Nothing can more disfigure the appearance of a horse, than to be half nicked. The form of the tail, when this unfortunately happens, departs from the simplicity of nature, and never attains the elegance of art.

The first mode of nicking I shall describe, is the simplest, and attended with the least trouble; and although it succeeds well, twice out of three times, yet I think inferior to the other two I shall presently describe. Being prepared with a sharp knife and a crooked piece of iron or buck's horn, for the purpose of performing the operation.

1st. Have a twitch placed upon his nose as directed in the engraving annexed.—*Figure 3.*

2d. With a strong rope, confine his left hind leg to his left fore leg, above the knee.—*Figures 5 & 6.*

3d. Plat the tail close and neatly, from the root to the end, clubbing or turning it over a small stick.—*Figure 7.*

4th. Turn the tail up, with a strong arm that can keep it firm and steady, in a direct line with his rump and back-bone.—*Figure 7.*

5th. With a sharp knife make an incision on each side of the tail about three inches long, in a longitudinal direction, about two inches from the root, and about a quarter of an inch from the outer edge of the tail, next to the hair; so soon as you get through the skin, you will find exposed the two large tendons.

6th. Make a second pair of incisions, similar to the first, commencing within about two inches of the termination of the first.

7th. Make one other pair of incisions, in length proportioned to the length of the tail, taking care to leave about two inches at the end.

8th. With a crooked iron or horn, take up the tendons at the first incision, as near the root of the tail as possible, and cut them smoothly in two.

9th. Take up the tendons at the second incision, and by using strength, draw those in the first incision out at the second.

10th. Draw those of the second out at the third incision, and cut them off smoothly.

11th. Wash the tail in strong salt and water, and take from the neck vein half a gallon of blood, three times within a week.

12th. The horse may be turned out or used moderately, and should be fed on green or light food; his tail should be washed clean, with soap and water, three or four times within a fortnight; by which time, in all probability, he will be entirely well. A horse nicked in this way will require no pulleying, provided the tail is well strained up, with a strong arm, twice a day.

The second mode of nicking is attended with more trouble than the first: but with the greatest certainty of a horse carrying an elegant tail. Having confined the horse as first directed, and prepared yourself with a sharp knife—

1st. Make an incision entirely across the under part of the horse's tail, deep enough on each side to cut in two the depressors or tendons, but shallow in the middle, and about two inches from the root of

the tail. When the depressors are entirely cut in two, one end of them will suddenly draw towards the rump, and the other will slip or shoot out of the wound about half an inch, which must be cut off smoothly and even with the wound.

2d. The second incisions must be made like the first, from which they must be distant about three inches.

3d. The third incisions should be made like the second, except deeper. If any artery should be cut, it is no cause of alarm; as a plentiful bleeding is of infinite service in speedily curing the tail thus operated on, and the blood is easily stopped by wrapping the tail up with a small quantity of salt, added to a handful of flour, or by placing him in the pulleys; though from a gallon to a gallon and a half of blood would not be too much to lose.

4th. After nicking, the tail should be washed in strong salt and water, and the horse may not be pulleyed for three or four days, at which time all blood, dirt, &c. should be carefully removed, not only from the under part of the tail, but from amongst the hair also, and should be kept clean until he is cured, which will be about three weeks; by which time should he not be fat, his condition will be much improved.

5th. The tail should be taken out of the pulleys every three or four days, unplatted, and washed clean with strong soap-suds.

6th. Bleed every five or six days, taking from a half to a gallon of blood at each bleeding, and if the tail appears much inflamed, bleed oftener; it will remove fever and inflammation, and cause the wounds to heal very quick.

7th. His food should be easy of digestion, light and cool, such as bran, oats, or green food of any kind. If the root of the tail should be inflamed, (which is very often the case after pulleying,) or should small biles appear, apply a little tincture of myrrh, copperas, or blue-stone water. It very often happens, that the hair in the tail of a nicked horse shows a disposition to drop, which should be prevented, by washing the tail in sharp vinegar, and keeping it nice and clean with soap-suds. The matter discharged from the wounds, if permitted to remain amongst the hair for twenty-four hours, will take it off as readily as a knife. It is of very great importance to prevent this, as the best nicked horse in the world will look ugly, if he has little or no hair in his tail; besides, it generally takes twelve months to replace it.

Horses are sometimes nicked, when their blood is in a bad state, which is the cause of their tails swelling and showing marks of violent inflammation; to remove which, it will be only necessary to bleed plentifully and apply a poultice made of a strong decoction of red oak bark and corn meal.

If this operation should be performed in a season of the year when flies are troublesome, the tail and buttocks of the horse should be anointed with sturgeon's oil, which will effectually remove them.

I shall now proceed to describe the third and best mode of nicking every description of horses; and which, if well attended to, will seldom or never fail to succeed.

1st. The stall, pulleys, halter, and manger, should all be prepared for the reception of a horse, previous to being nicked, as directed in the engraving prefixed. The pulleys (*figure 2*) about six or eight feet

apart, and about the same distance from the stable floor, over each side of the stall, and firmly fastened to the wall; a smooth and small cord is then to be passed through each of the pulleys, and to each end must be confined two equal weights, as figure 10; the balter should be constructed and fastened as figure 11; the trough should be securely fastened to the stall or wall, to prevent its being pulled down, (*figure 8*.) the stall should be three or three and an half feet wide, and not deep enough to allow a horse to rub and disfigure his tail, as figure 9.

2d. The horse should be confined, as *figures 5, 6, and 3*, and the tail closely and neatly platted up and clubbed at the end, or turned over a small stick, and securely tied with a waxed string, as *figures 7 and 4*.

3d. Being provided with a sharp knife and a crooked piece of buck's horn, and the tail being turned up by a strong arm, in a direct line with the back bone, as before mentioned, commence the operation by making a transverse incision, immediately across the tail, one and a half inches from the root, and deep enough to separate entirely the tendons on each side of the under part of the tail, which will be found about a quarter of an inch from the hair on the outer edge; this incision in the middle may be shallow. The large arteries lie so immediately under the tendons, that they are often wounded or separated in performing this operation, which will be a great advantage in the healing of the wounds, instead of doing injury by the loss of blood. But whenever a horse may have bled from one to two gallons, the bleeding will readily stop by placing the tail in pulleys, or by applying a small quantity of flour and salt to the wound, and wrap the tail up moderately tight with a linen rag, from the root to the end.

4th Make two incisions lengthwise or longitudinally, (commencing about two or two and a half inches from the cross or transverse incision,) and about three inches in length, which will expose the large tendons on each side.

5th. Make two other incisions of the same kind, commencing about one inch from the second, and in length running within about two inches of the end of the tail.

6th. Make a transverse incision within half an inch of the termination of the longitudinal incisions, (or those made lengthwise,) pretty deep.

7th. With a buck's horn take up the large tendons in the second incisions, and draw the ends out of the first; take up those in the third and draw the ends out of the second, and at the upper part of the wound cut off the tendons even and smooth.

8th. With a strong arm strain up the tail opposite the second incisions, until the bone slips or breaks; treat the tail opposite the third incisions in the same manner—also the fourth and last, which should be made across.

9th. Wash the tail in strong salt water, and the horse may be placed in a stall, turned in a pasture, or elsewhere, for two or three days.

10th. Wash the wound and tail clean with strong soap suds, and place the horse in the pulleys, by passing a small noose (*Figure 1*) over the stick confined in the hair, at the end of the tail—(*Figure 4*.)

11th. Take from the neck vein half a gallon of blood, each week, until he gets well; or double the quantity should the tail be much inflamed. He should remain in the pulleys about three weeks, in order to give the new flesh time to get firm, and should be washed once

a day with castile soap, so that it may be kept entirely clean. The tail should be taken out of the pulleys twice a week, the hair unplatted, and permitted to remain down all night, and the horse changed to a clean and large stall, with a good bed of straw, for the purpose of sleeping and refreshing himself. Before he is again confined, he may be rode two or three hundred yards, slow, and without being fretted. Whilst standing in the pulleys, his legs should be frequently bathed with pot-liquor, in which bacon was boiled; vinegar and sweet oil, or lard and spirits of any kind; and a mash should be given him at least once a week, of one gallon of bran or oats, with a table spoonful of powdered brimstone, and one tea spoonful of salt-petre; not permitting him to drink for six hours afterwards. His halter should be made of substantial materials, to prevent his breaking loose whilst confined in the pulleys, pulling the hair out of the end of the tail, and doing himself other injury. A bucket of salt and water may be given twice a week during his confinement, which will be very grateful to the taste and cooling to the system.

12th. Great pains should be taken to have the weights to the pulleys equal, in order to keep the tail in a perpendicular direction, and prevent it from turning to either side during the time of healing; as a horse that carries his tail round to one side, instead of being elegantly nicked, is ruined. The wounds, occasionally should be washed in blue-stone or copperas water, which will cause them to heal rapidly; the horse should have as much green and light food as he can eat, such as bran, oats, &c. Some horses that are nicked in this way, and are pulleyed only four or five days, carry very handsome tails; but I am of opinion:

to ensure success, it is necessary they should be kept in the pulleys until the wounds are perfectly well.



PRICKING.

THE pricking a horse has proved to be as useless an operation as it is simple, seldom or never having the desired effect; consequently the practice should be abolished. Many nicked horses fail to carry good tails; and much less is it to be expected from a horse that is pricked. I would recommend that the operation should never be performed.



FOXING.

To fox a horse is an operation so simple, that it can be performed by almost any person. The only skill is, to select such horses as will be improved by being foxed. There is an instrument generally used for this purpose, but the operation can be performed very correctly without it. The simplest and easiest mode is, to take a very small paint-brush, and with paint that will form a contrast to the colour of the horse, mark the ears of the shape and length you prefer; then place on his nose a twitch; have one of his fore

legs held up; and with a sharp knife cut off the ears, carefully following the line which was previously made with the brush; the skin will immediately slip down and leave the gristly part a little naked, which must be washed in salt and water once a day for about a week, after which they should be greased with a little sweet oil, fresh butter, or hog's lard, and they will get entirely well in two or three weeks. A horse with a small, thin, delicate head, will always be much improved by being foxed. But a horse with a fleshy, heavy, thick, or long head, will show with less advantage after his ears are cut off, even if he carried them extremely bad previous to the operation.



DOCKING.

DOCKING a horse is an operation so simple, as to require but little skill or judgment in its performance. A twitch is to be placed upon the upper lip of the horse, but not so high as to prevent his breathing, (as in the engraving for nicking, *figure 3*,)—one of his fore legs must be held up to prevent his kicking or doing other injury, and a waxed string must be tied very tight twice round the tail, just above the place where it is to be cut off; a large block of wood is to be placed upon his rump, and the tail turned up and laid smoothly on the block; then, with a sharp instrument, you may cut the tail the length you prefer. (though horses docked short generally carry the best tails.) or after the waxed string is securely tied, take

the tail in one hand, and a large knife (sharpened on a trick to give it a rough edge) in the other, and with ease, at one stroke, you may cut the tail in two: then take a piece of iron, moderately hot, place a little rosin in the wound, and sear it, recollecting to cut off the waxed string two or three days afterwards, and grease the tail with a little fresh butter or sweet oil, which will cause it to heal very quickly afterwards. When a horse is docked, the same tendons, arteries, and nerves are separated, that are divided in nicking; and it is very rare that a horse's life is endangered or lost in consequence of performing either operation.



[FROM LOUDON'S ENCYCLOPEDIA OF AGRICULTURE.]

CASTRATING COLTS

THE time for castrating or gelding of colts is usually when they are about a year old; although this operation is frequently suspended till the second year, especially when it is intended to keep them on hand, and without employing them in labour till the following season. Parkinson disapproves of delaying this operation so long, and recommends twitching the colts, a practice well known to the ram breeders, any time after a week old, or as soon after as the testicles are come down; and this method, he says, he has followed himself, with great success. Blaine's remarks on the subject of castration appear worthy of notice: he says, when the breed is particu-

larly good, and many considerable expectations are formed on the colt, it is always prudent to wait till twelve months: at this period, if his fore parts are correspondent with his hinder, proceed to castrate; but if he be not sufficiently well up before, or his neck be too long and thin, and his shoulders spare, he will assuredly improve by being allowed to remain whole six or eight months longer. Another writer suggests for experiment, the *spaying* of mares, thinking they would work better, and have more wind than geldings. But he does not appear to have been aware that this is by no means a new experiment; for Tusser, who wrote in 1562, speaks of *gelding fillies* as a common practice at that period. The main objection to this operation is not that brood mares would become scarce, as he supposes; but that, by incapacitating them from breeding, in case of accident, and in old age, the loss in this expensive species of live stock would be greatly enhanced. An old or lame mare would then be as worthless as an old or lame gelding is at present.

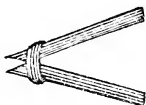
[*The following mode of castrating colts is taken from Mr. Skinner's American Turf Register and Sporting Magazine.*]

The operator must in the first place provide himself with a strong rope, a couple of clamps for each colt, (if he intends altering more than one,) a little paste, a ball of twine or good thread, and a phial of the following mixture:

R. *Two tea-spoonfuls of red precipitate,*
One do. of corrosive sublimate,

to be well ground separately, and then intimately mixed. The clamp is made thus: Take a piece of

elder six inches long and from three quarters to one inch in diameter; bark it, and split it through the middle, and having taken out the pith, cut one adjoining end of each piece with a slope, from the inside outwards, about an inch, and notch it on the outside, as also the other end that is not sloped, that they may be securely tied together. Fill the hollows nicely with the paste, and sprinkle over it some of the mixture in phial. Then place the sloped ends together in such a manner that the other ends will be separated about an inch, and tie them by several turns of the thread in that position, thus:



Every preparation being made; the colt thrown and carefully tied; the integuments of the testicles are to be laid open, the stone pulled out, and the epididymis separated from its adhesion to the lower end of the testicle as in the ordinary way. The cord is then caught in one of the clamps, which is pressed hard upon it, and firmly tied at the open end. When this is accomplished, the cord must be cut directly off, close to the edge of the clamp, and a little more of the above mixture should be sprinkled upon the ends exposed by the knife. After the operation is concluded, the clamps should be suffered to remain on eighteen or twenty-four hours. They may then be taken off by penning the colt in a confined place, and cutting the strings which tie their blunt ends. Neither swelling, nor stiffness, nor any other inconvenience follows this operation, and the animal appears, after he is relieved of the clamps, as well as ever he was. This method may, with equal efficacy, be applied to every other animal whose age or size renders the old way precarious.

FATTENING.

To fatten a horse in a short space of time, has generally been considered a very great art, and attended with much difficulty. Some authors are of opinion, it is necessary for a horse to swallow a certain quantity of medicine to produce the desired effect; while others rely on an uncommon or peculiar kind of food; but experience has proved that both opinions are erroneous, and that the few simples which I shall here recommend, together with good rubbing and a particular manner of feeding, will accomplish the fattening of a horse that is not a garran or extremely poor, within three or four weeks. After your stable is prepared, (as directed in pages 46 and 47,) provide a plenty of good sweet corn, hommony, oats, bran, and fodder; also a sufficient quantity of straw to keep him with a comfortable and clean bed; then notice the condition of the animal, for the purpose of bleeding in the neck. Should he be very poor, take from him only one quart of blood; if in tolerable plight, two quarts—repeating the bleeding at the expiration of every eight or ten days, until he is fat. Take of flaxseed one pint, boil it to a strong tea of one quart; take of powdered brimstone, one table spoonful; salt-petre, one tea spoonful; of bran, one and a half gallons; mix them all together, scalding the bran with the tea, forming a mash; which may be given every eight days: not permitting the horse to drink cold water for eight or ten hours afterwards. Take of asafœtida (which can be procured from any apothecary's shop) half an ounce; wrap it in a clean linen rag, and nail it in the bottom of the manger where the animal is fed; at first the horse will eat unwillingly where it is placed, but in a few days he will grow remarkably fond of it.

When you commence kind treatment towards a horse that has been cruelly used, let it be with great caution, or you may produce a founder or some other injury; those serviceable animals being too often hard used and half starved. For three or four days, allowance a horse you contemplate fattening, to two and a half gallons a day, six or eight bundles of fodder, or an equal quantity of hay; after which you may keep your rack constantly full of long food, and never permit the manger to be entirely empty: taking care to change the food every day, giving the largest proportion of bran, viz.:—bran and hommony, bran and oats, bran and corn, bran alone, oats, corn, hommony, &c. &c. The food moistened occasionally with strong sassafras tea, produces an admirable effect; it whets the appetite, enriches the blood, and opens the bowels. Whenever a horse is fed, all dust, sour food, &c. should be removed from his manger, which should be washed twice a week with vinegar and salt; this kind of attention will aid the appetite and keep the manger sweet and clean. If the season of the year you undertake to fatten in, affords green food of any kind, a little about twelve o'clock would assist you much in accomplishing your object. In the bucket in which you water, throw a handful of salt, two or three times a week; it becomes very grateful to the taste, after a few days' confinement, and will prevent his pawing and eating dirt. If the object is to fatten a horse as speedily as possible, giving to him unusual life and spirits, he should not be brought out of the stable, nor even led to water. But if flesh is to be placed upon a horse to render hard service, I would recommend moderate exercise once every three days, carefully avoiding fretting or alarming him; more injury may be done a horse by fretting him one day

than you can remove in a week by the kindest treatment. The hoofs should be cleaned out every morning and evening, stuffed with clay and salt, or fresh cow manure, to keep the feet cool and prevent a swelling in the legs. A plenty of good rubbing is absolutely necessary for the placing of flesh speedily on a horse ; and a blanket as a covering, at any time except the summer months, will place on his coat of hair a beautiful gloss, and add much to his comfort and apparent value.



EXCESSIVE FATIGUE.

FOR a horse to undergo very great fatigue without injury, requires at least one week's preparation. Previous to entering him on his journey, he should be fed plentifully on solid old food, such as corn, fodder, hay or oats, and smartly exercised from five to ten miles a day. He should be well rubbed two or three times every twenty-four hours, which will very readily have the effect of making his flesh not only firm, but hard. I have no doubt, from the experiments I have made, that any tolerable good and active horse may be rode one hundred miles, in a pleasant long day, without receiving any permanent injury, by observing the treatment I shall here recommend. Experience has proved that rainy or drizzly weather is more favourable to the performance of an excessive hard ride, than a day that is fair or sultry, with sunshine ; rain has the effect of keeping him cool, suppling his limbs, of moistening and refreshing him. On the night pre-

vious to his engaging in this laborious undertaking feed your horse with one and a half gallon of oats, or one gallon of corn and six bundles of fodder ; in the morning feed with one quart of oats or corn only, and offer some salt and water, of which a horse is apt to drink but little early in the morning. You then set out on your journey, in such speed as is proportioned to the distance you contemplate going in the day. A rider, who is compelled to perform a long journey in haste, and with certainty, in a given time, should be extremely particular in his manner of riding. He should bear lightly and steadily on his bridle and stirrups, never jerking, checking, or stopping his horse suddenly, or change his gaits too frequently ; all these things have a tendency to weaken and fatigue a horse extremely. A good rider will more resemble the light and airy movements of a feather, than the dull and leaden gravity of a bullet ; the same horse can convey a good rider twenty miles farther in a day than he can one unskilled in this necessary and elegant accomplishment. After progressing about fifteen or eighteen miles, refreshment will be necessary, not only for the horse, but the rider also. You will then give him a bucket of salt and water with two handfuls of corn meal thrown therein, and one quart of oats or corn ; at twelve o'clock and at dinner time, feed and water in the same manner. Great care should be taken to prevent your horse from drinking cold pond or well water or indulge in any inviting rivulet he may meet in his road, more than to moisten his mouth. It is a practice among hostlers, when they have no particular directions, to plunge horses that are tired and heated at twelve o'clock, into cold pond water ; in preference to which I would advise that their legs should be well rubbed with about half a pint of any kind of spirits

Your last feed being at two o'clock, or dinner time, your horse will require nothing more until night. The day's ride being performed, turn him into a lot to cool and wallow; after which let him be placed in a stall, on a good bed of straw. 1st. Offer him a bucket of water. 2d. Remove all dirt and dust from his legs and ancles with soap and warm water. 3d. Bathe him from his belly to his hoofs with equal parts of vinegar and spirits, to which add a little sweet oil, fresh butter, or hog's lard, stewing them all together, and make use of the mixture as warm as the hand can bear it. 4th. He must be well curried, brushed, and finally polished with a sheepskin or woollen cloth. 5th. His feet should be nicely cleaned out, and stuffed with clay and salt, or fresh cow manure. 6th. He should be fed with one gallon of old corn, or one and a half gallons of oats, and six bundles of old fodder. Your horse being now in possession of every attention and comfort you could offer him, will soon be refreshed, forget his hard service, and be again prepared, by the next morning, to obey you whither you may direct his footsteps. If you have more than one day's journey to perform with great rapidity, observe the same rules of feeding, watering, and attention, as directed for the first day, except the feed at twelve o'clock, which quantity must be doubled. Many elegant and high spirited horses have been ruined and rendered useless by persons wanting experience on the above subject, who were disposed to treat those faithful animals with every kindness in their power; yet being under the necessity of performing a long journey in a limited time, and not knowing that the will of a heated and fatigued horse should be controlled, they have permitted him to eat as much as he pleased, or when heated, to drink as much cold pond or branch water as his great thirst

would induce him; which have often been the means of producing cholic, founder, and other diseases, that too frequently prove fatal in the hands of a common farrier, to which title every hostler, blacksmith, and every blockhead of a servant, who does not even understand the currying of a horse, have pretensions. The loss of two or three quarts of blood, to a horse that has undergone excessive fatigue, will remove the soreness and stiffness of his limbs, the natural consequence of violent exertions.



TREATMENT ON A JOURNEY.

To perform a long journey, with comfort and ease to a horse, and satisfaction to the rider, requires some attention to the feeding, for eight or ten days previous to the setting out. A horse uncommonly fat, running late at grass, fed with unsubstantial food, such as bran, &c. or unaccustomed to exercise and fatigue, is very unfit to perform a journey on, unless prepared by being fed on old and solid food, for eight or ten days, such as corn, fodder, oats, or hay, and given moderate exercise. A horse about half fat is in the best situation to bear the fatigue and labour of a journey by following the mode of treatment I shall here recommend. If he is only a tolerably good one, by the time he reaches his journey's end, should it last four or five weeks, his condition will be much improved, if he is not entirely fat. 1st. It is necessary to have your horse shod with a good and substantial set of shoes,

taking care that they fit easy, set well, and are not placed so near the inside of the foot as to cut the ankles in travelling, which often produces stiffness, considerable swelling of the legs, and sometimes lameness. 2d. Examine your saddle, valise, portmanteau, harness, &c. as the case may be, to discover if they fit with ease and comfort to your horse, taking care to let them undergo the same examination every two or three days. For a saddle to fit properly, it must be neither wide enough in the tree to slip upon the shoulders, or so narrow as to pinch or break the skin on the withers, the bolsterring or stuffing in the pannels should be adapted to the hollow spaces on each side of the back bone or spine. When thus properly fitted, a crupper will be useless. 3d. Your valise should be fastened on by passing two straps underneath two pieces confined to the valise pad, and through two loops at the back of the saddle; by which means it will be kept steadily in its proper place, and the rider will not be perplexed by its swinging first on one side, and then on the other, and the danger of the horse having a sore back from friction will be avoided. The only difference between the customary way of fastening a valise and the one I here recommend, is the passing straps through the loops to the back of the saddle.

On the night previous to your commencing your journey, after your horse is placed on a good bed of straw, and is well rubbed, feed with two gallons of oats, or one and a half gallons of old corn and hommony, and eight or ten bundles of fodder, or a quantity of hay equal to it. In the morning feed with half a gallon of oats, after which offer a bucket of water. It is customary for horses to be watered before being fed; but it is much better not to water them until afterwards; a large draught of water very often

destroys the appetite, and makes a horse dull and sluggish for a whole day afterwards. When he is watered in this way, he seldom drinks too much, and his mouth is washed clean and is moist when he commences his journey. It also measurably destroys his inclination to drink out of every stream he may cross in the road, which is so tiresome and unpleasant to a rider.

Being now completely prepared for the contemplated journey, the following rules must be strictly observed. 1st. Never permit your horse, while travelling, to drink cold branch, well, or pond water, or more than is necessary to wet or moisten his mouth. 2d. Every time you stop to feed, (which will be morning, breakfast, and dinner time,) give him a bucket of water, made a little salt, with about two handfuls of corn meal stirred in it; he will very soon grow fond of it, and indeed prefer it to any other drink; it cools the system, relieves thirst, and contains considerable nutriment. 3d. Whenever you stop for the purpose of breakfasting, let your horse cool about ten minutes; then feed with half a gallon of oats or corn, and two bundles of fodder, not forgetting to offer him again the water, meal, and salt. 4th. At dinner time observe the same treatment as directed at breakfast. 5th. At night (having arrived at the place you intend stopping at) have your horse turned into a lot, for the purpose of wallowing, cooling, &c. 6th. With soap and water have all dirt removed from his legs. 7th. Have him placed on a good bed of straw, then take of spirits of any kind half a pint, of vinegar half a pint, mix them together, and let his legs be rubbed with the mixture until they are dry. 8th. Let him be well curried, brushed, and rubbed with straw. 9th. Water him plentifully. 10th. Feed him with two gallons of oats, or one and a half gallons of corn or hommony,

and eight or ten bundles of fodder. 11th. Let his hoofs be nicely cleaned out and stuffed with fresh cow manure ; this application keeps them tough, moist, and cool. 12th. Change your food as often as possible, carefully avoiding using any that is new, or just gathered. Observe the above rules to your journey's end, except your horse should prove a great feeder, and in that case you may indulge him a little ; but the quantity I have here recommended, is enough for any common horse when travelling. It may not be amiss to remind the young traveller to inspect his horse's shoes once a day, and whatever appears amiss about them to have immediately rectified. It frequently happens that the skin of young horses, unaccustomed to travel, is chafed and scalded by the friction of the girth ; the part, washed clean with a little soap and water, and then washed with a little salt and water, will immediately cure and toughen the skin.

It often happens at little baiting places or country taverns, (met with on the road by travellers,) that towards the end of harvest, servants are apt to feed with green oats or wheat, in consequence of the scarcity of fodder, unless otherwise directed ; food of this kind is poison to a travelling horse, and will produce a diarrhœa and extreme debility. It would be much better he should not have long food for two weeks, than to give it to him green from the field. When persons travelling are not attentive to their horses, they are frequently given mouldy oats and corn, which is productive of the worst effects ; there being but few kinds of food that can be given a horse, that will terminate his existence more speedily. Many of those valuable animals have been destroyed by such means, when the owners have been frequently at a loss to know with what disease or from what cause they had died

AGE.

To be able to ascertain the age of a horse, with tolerable certainty, from three to nine years old, is a subject of considerable importance to every person who may have occasion to purchase. Unless we possess this information, we are subject to the imposition and to become the sport of every jockey, whose vice and depravity frequently surpass those of the most untractable horse. Some judges undertake to tell the age until a horse is fifteen or twenty years old, which in my opinion is impossible; they merely make a guess, without any rule by which they are governed, and four times out of five they labour under a mistake. If I am enabled to describe such marks and appearances as will make any person a judge of a horse's age, from three to nine's years old, I shall conceive I have performed a useful task, and shall be the means of preventing many impositions. Horses that have not arrived at three years of age, are unfit for use, and those that are more than nine, decrease in value with great rapidity. All that are particularly fond of horses, will always be filled with regret on viewing an elegant horse worn out with old age, yet possessing strong marks of beauty, and even former fine and graceful actions. It is to be much lamented that so beautiful an animal should so soon feel decay and be no longer useful. I shall proceed to lay down such rules for ascertaining the age of a horse, as will enable any man to speak with tolerable certainty on that subject. Every horse has six teeth above and below; before he arrives at the age of three he sheds his two middle teeth by the young teeth rising and shoving the old

ones out of their place. When he arrives at the age of three, he sheds one more on each side of the middle teeth; when four years old, he sheds his two corner and last of his fore teeth; between four and five he cuts his under tusks, and when five will cut his upper tusks, and have a mouth full and complete his teeth appearing to have their full growth, except the tusks, and will be even, regularly placed, and pretty much grooved on the inside, with hollows on a very dark brown colour. There is always a very plain difference between colts' and horses' teeth; the colts' being without grooves and hollows, and never so large and strong. Some horses are without upper tusks even to the end of their lives; but this is not common. The appearance of the lower tusks, and them fully grown, is the most certain proof that the horse is five years old, even if one of his colt's teeth remains unshed. At six years old, the grooves and hollows in a horse's mouth begin to fill up a little, and their tusks have their full growth, with their points sharp, and a little concave or hollow on the inside. At seven years old, the grooves and hollows will be pretty well filled below, except the corner teeth, leaving where the dark brown hollows formerly were, little brown spots. At eight, the whole of the hollows and grooves are filled up, and you see the appearance of what is termed *smooth below*. At nine years old there very often appears a small bill to the outside corner teeth; the point of the tusk is worn off, and the part that was concave begins to fill up and become rounding; the squares of the middle teeth begin to disappear, and the gums leave them small and narrow at top. Dealers in horses sometimes drill or hollow the teeth with a graver, and black the hollows by using a hot iron, for the purpose of passing an old horse for a young

one, upon those who have but little or no experience upon the subject. But a discerning eye will readily discover the cheat, by the unnatural shape and blackness of the hollows, the dulness and roundness of the tusks, together with the want of squares to the front teeth, and by many other visible marks, which denote the advanced age of a horse.

Between nine and ten years of age, a horse generally loses the marks of the mouth, though there are a few exceptions; as some horses retain good mouths until they are fourteen or fifteen years old, with their teeth white, even, and regular, and many other marks of freshness and vigour. But when a horse grows old, it may be discovered by these indications, which commonly attend old age, viz.: The gums wear away and leave the roots of the teeth long and slender; the roots grow yellow, and often brownish; the bars of the mouth (which are always fleshy, plump, and dry, in a young horse, and form so many distinct, firm ridges,) in an old horse, are lean, smooth, and covered with saliva, with few or no ridges. The eyes of a young horse appear plump, full, and lively; the lids with few wrinkles, the hollows above the ball small, and no gray hairs upon the brow, unless they proceed from the colour or marks of the horse. The eyes of an old horse appear sleepy, dim, and sunk, and the lids loose and very much shrivelled with large hollows and the brow gray. The countenance of a young horse is bold, gay, and lively; while that of an old one is sad, dejected, and melancholy, unless mounted, and artificial means used to give him spirit.

The chin of a horse, in my opinion, is by far the best mark to enable you to ascertain his age, inasmuch as it does not admit of the practice of those arts, by

which the jockey so often passes off an old broken down horse for a young one. The appearance of the chin can be changed only by nature: and he who will become an attentive observer, will soon be convinced, that it is not more difficult to tell an old horse from a young one, by the appearance of their chins, than it is for a skilful physician to distinguish a cheek of health from one that is wasted, diseased, and superannuated.

The chin of a young horse is round, full, plump, full of wrinkles, and the pores close and small; that of a horse advanced in years, flat, wrinkled, flabby, and the pores open and large. Indeed, after some experience, together with particular attention to this mark of age, there will be but little difficulty of ascertaining, with certainty, the age of a horse from three to nine years old. I have sometimes met with travellers on the road, whom I never before had seen, and in travelling along, have told the age of their horses by their chins. An examination of the lips and nostrils of a horse, may aid, corroborate, and strengthen the opinion of age, founded on the appearance of the chin. The lips and nostrils of a young horse are smooth and free from wrinkles, while those of an old one abound in them.

Were I in pursuit of truth and honour, I never should seek them in the lower class of dealers in horses or horse jockeys. Whenever they have a horse to dispose of, they assure a purchaser he possesses every desirable quality, &c. and whenever they have effected a sale, they smile at their success, and expose every vice to which the horse was addicted, to the next person they meet.

The physiognomy of a horse will assist much in ascertaining his age; but the chin is certainly the safest guide.

[FROM THE AMERICAN FARMER.]

AGE BY FEELING

A wonderful discovery recently made in an old Horse's age.

“ 'Tis to the pen and press we mortals owe,
All we believe, and almost all we know.”

SINCE the age of that noble animal, the horse, after a certain period of life, (that is to say) after the marks in his *incisors* and *cuspidati* are entirely obliterated, to be able to ascertain his age, with any tolerable degree of certainty, appears to the generality of “*horse age judges*,” to be a subject of very much uncertainty. I now take the liberty of laying before the public, through the medium of your paper, an infallible method, (subject to very few exceptions) of ascertaining it in such a manner, after a horse loses his marks, or after he arrives to the age of nine years or over; so that any person concerned in horses, even of the meanest capacity, may not be imposed upon in a horse's age, from nine years of age and over, more than three years at farthest, until the animal arrives at the age of twenty years and upwards, *by just feeling the submaxillary bone, or the bone of the lower jaw.*

This method I discovered, by making many anatomical observations on the skulls of dead horses and repeated dissections. In order, therefore, to elucidate the above, I must in the first place beg leave to remark; that the submaxillary bone, or the lower jaw bone

of all young horses, about four or five years of age, immediately above the *bifurcation*, is invariably thick and very round at the bottom; the cavity of said bone being very small, contains a good deal of marrow, and generally continues in this state until the animal arrives at that period which is generally termed an "aged horse," or until the animal acquires his full size in height or thickness; or *according to, reporting language, is completely furnished*, with very little variation. But after this period, the cavity as aforesaid becomes larger, and more marrow is contained therein. Hence the submaxillary bone becomes thinner and sharper a little above the *bifurcation*.

This indelible mark may always be observed in a small degree in horses above eight years of age; but at nine years old it is still more perceptible. It continues growing a little thinner and sharper at the bottom until twelve years of age. From thence until fifteen, it is still thinner, and about as sharp as the back of a case knife near the handle. From this period until the ages 18, 19, 20, and upwards, it is exceedingly so; and is as sharp, in many subjects, as the dull edge of that instrument.

RULES.

1st. Put your three fingers about half an inch or an inch immediately above the bifurcation, and grasp the submaxillary bone, or the lower jaw bone. If it is thick at the sides, and very round indeed at the bottom, the animal is most certainly under nine years of age.

2d. If the bone is not very thick, and it is perceptibly not very round at the bottom, he is from nine to twelve years old, and so on. From twelve to fifteen, the bone is sharper at bottom, and thinner at the

sides, the bottom is generally as sharp as the back of a case knife; and from 15 to 18, 19, 20, and upwards, without many exceptions, the bone, when divested of its integuments, is as sharp as the dull edge of that instrument.

3d. Allowances must always be made between heavy, large western or wagon horses, or carriage horses, and fine blooded ones. By practising and strictly attending to the above rules, upon all descriptions of horses, the performer in a little time will become very accurate in the accomplishment of his desires, more especially if he attentively observes the lower jaw bone of dead horses "



MARKS.

PERHAPS there is no subject to be found, that admits of a greater diversity of opinion, than the form and number of marks necessary to constitute the beauty of a horse. Many white marks, when of irregular shape, and handsomely placed, give to a handsome horse a gay and sprightly appearance, lightening up the countenance, and forming a beautiful contrast to his colour. Indeed, marks are sometimes so irregularly and fancifully placed, as not only to please, but to delight most persons who are judges on this subject; while others of such regular, common, and unbecoming shape, and so unnaturally placed as to be unfavourable to beauty and have a tendency to disfigure the animal they are

intended to beautify ; such as a face blazed large, high, and regular, like an ox ; the two fore legs white above the knees, and no white behind ; one white leg to the knee, behind on the right ; one fore leg white to the knee before on the left : a bald face and no white legs : a dim blaze, commencing with an awkward star, ending with a snip on the one side, &c. &c. A horse without marks, always has a deadness in his aspect—and one well marked, always appears the more beautiful for it. But it must be acknowledged, by every person of experience, that a horse with white feet, is much more tender than one without them. Even in cases of lameness not proceeding from accident, nine times out of ten, if a horse has a white foot, that will be the one that will first fail him. White feet are also more subject to the scratches and other diseases, than those of different colours, and a very remarkable fact exists, that I never have seen or heard, in my life, of a first rate four mile heat racer, that had a bald face and white legs to the knees.

White marks add to the beauty of a horse, but lessen his services.



BLAZE OR STAR.

WHEN we have a pair of horses that match well in every respect, except that one has a blaze or star in the face, it becomes very interesting and important to know how to make their faces match, and to give

them blazes or stars precisely alike. This may be done in the following manner:—

Number 1.—Take a razor and shave off the hair the form and size you wish the blaze or star to be made: then take a small quantity of oil of vitriol, and with a feather anoint the part once, which will be quite sufficient. After the application of the vitriol, the part will become a little sore and inflamed; which may be readily removed and healed up, by washing the sore with copperas water. Great care should be used to prevent the vitriol from getting on clothes, as it will entirely destroy them.

Number 2.—Take a piece of oznaburgs the size you want the blaze or star: spread it with warm pitch and apply it to the horse's face: let it remain two or three days, by which time it will bring off the hair clean, and make the part a little tender; then take of elixir vitriol a small quantity; then anoint the part two or three times; or, of a very common weed called asmart, a small handful, bruise it and add to it about a gill of water, use it as a wash until the face gets well, when the hair will grow out entirely white.



HEAD.

THE head of a horse should be small, bony, thin, and delicate; his jaws wide apart, yet thin; his throat large and arched; his ears long, thin, narrow, high and pointing together; his eyes prominent large and

full, of a dark cinnamon or black colour, bright, lively, and shining; his nostrils wide, red, and expanded; his mouth and lips thin, small, and plump; his chin full, sharp, and delicate; his face rather of a Roman order than straight, with irregular white, either in a star or blaze, to give expression and light up the countenance



BODY.

THE body of a horse should be large, in proportion to the balance of his frame, compact, round, and swelling; his flanks plump and full; and his last or smallest rib, approaching near the hip bone, which is never placed too near the point of the shoulders; the back should be very short, smooth, and nearly even, neither swayed nor humped; the hips wide apart, full, round, and even with the body. A horse with a light flat body, open and gaunt about the flanks, with high spirit, long legs, &c. is unfit for any purpose, except for show; and that not for more than two or three hours: for his rider, after that time, as well as every spectator, will discover him sinking under fatigue, and completely giving up.

NECK AND SHOULDERS.

THE neck of a horse should be long, thin, and delicate (indeed they are never too long or too delicate) growing deeper from the joining of the head to the shoulders; the upper edge should form the half of an arch, gradually falling in height and shape from the head to the shoulders; the mane should be thin, smooth, and in length half the width of the neck.—The shoulders of a horse should be thin, high, and thrown very far back; for experience has proved, that those with low shoulders and high rumps, although they may have many good parts, can never show to advantage, and seldom make good saddle or race horses.



LEGS.

THE fore legs of a horse should bear a just proportion to his size; the arms large, long, and full; the legs bony, flat, and sinewy; the pasterns rather long than otherwise, and tolerably straight. Small lean arms, a bending back or trembling of the knees, bow legs, small and round legs, extremely delicate back sinews, or those unnaturally large, indicate weakness or some injury, and should be avoided. The hind parts of a horse, from the hip bone to the hock, should be of great length; the thighs and muscles should be full, large, and bulging; the hock broad, sinewy and

strong; the hind legs flat, smooth, bony, and full of sinew, clear of knots, and rather crooked in the hock than straight; the pasterns of moderate length, small and rather straight than otherwise. The horse should be neither knock-kneed or bow-legged, or his feet turned in or out; as a horse thus shaped, moves ugly, and never can be sure footed.



SHOEING

DISEASES are sometimes produced in the feet, from which a horse is never again free during his life; it is therefore important that a valuable horse should not be placed in the hands of every blockhead who pleases to call himself a horse shoer, but entrusted only to persons of known skill. For a horse to be well shod, the hoof should be pared with a buttress, (instead of giving in to the cruel and injurious practice of burning the foot with a red hot shoe until it fits,) smooth and level, to a reasonable size; the frog should be nicely trimmed, in shape a little convex, rather lower than the foot; the shoes should be made of good and tough iron, and precisely the shape of the hoof after being trimmed, not so wide between the heels as to show on the outside, or so narrow as to cramp the foot, and produce narrow heels, (which is a very troublesome disease) The nails should be made of old horseshoes, or some other tough iron, with small heads, and drove regular, smooth, and even; not high enough to reach the

quick, yet with hold sufficient to confine the shoe three or four months. The points of the nails should be formed into neat and small clinches, and should be well driven up

Some taste may be displayed in the rasping and shaping the hoof, after the shoe is confined. When it is left more sharp than flat around at the toe, it adds much to its beauty and neat appearance.

When a horse is well shod, if water is poured upon the bottom of his foot, it will not pass between the hoof and the shoe. A smith, who resided in Williamsburg, in the year 1804, was in the habit of shoeing in this exact and elegant style. Shoes for draft horses, that have seldom occasion to go out of a walk, should be heavy, strong, and with high heels, and pointed at the toe with steel.

Horse shoeing is what every worker of iron, who has acquired the name of a blacksmith, pretends to be well skilled in; but there are few indeed in possession of sufficient knowledge on that subject, to make it safe to place under their care a horse of value, for the purpose of being shod. To perform this operation correctly, and without present or future injury, requires not only good skill and judgment, but a thorough acquaintance with the anatomy of a horse's foot, which is a knowledge but few of our blacksmiths are in possession of, and is the cause of so many horses being rendered useless. Almost all the diseases in the feet, are, more or less, the result of bad shoeing, by wounding muscles, veins nerves, or arteries in this way.

HOOFS.

THE hoofs of a horse should be proportioned to his size; of a dark colour, smooth, tough, and nearly round; not too flat nor too upright, and the bottom hollow. White hoofs are much more tender than any other colour, nor do they retain or bear a shoe so well. One that is flat, turning up at the toe or full of ridges, or flat and pumiced on the under side, strongly indicates founder or other injury. If the hair lie smooth at the top of the hoof, it is an evidence of its being good, should there be nothing unnatural in its shape; but if the hair stands up and appears rough, and the flesh swelled a little beyond the circle of the hoof, it is a proof the foot is in some way diseased and a ring bone may be apprehended.



MANE AND TAIL.

THE mane and tail of a horse, when the hair is even, smooth, long, and well proportioned, adds much to the beauty, boldness, and majesty of his figure. Great judgment and taste may be displayed in the trimming and proportioning those two ornaments. A very large horse, even if elegant, appears mean and trifling if you attach to him a little rat tail; one very small with a monstrous long, bushy tail; or a square, narrowhipped, lathy horse, with a small bob tail, only serves

to point out his imperfections, and attach to his appearance an idea of insignificance and meanness. One with a remarkably long body, with a thin switch bob tail, bears no better proportion than the legs and thighs of a dwarf to the head and body. A large horse, roached and bobbed, never shows to advantage, as the appearance of the riding horse is given up, and the round and snug appearance of the nimble footed pony can never be attained. For a horse to look well with a bob tail, he should be plump, round, full, and compact; but all tails that are full of hair, show to much more advantage than those that are thin and frizzled.

Previous to a tail's being trimmed, great respect should be paid to the shape and proportion of the horse, and the tail should be made an equal proportionable part. The manes of all horses, except ponies, should be long, smooth, and reaching at least half way down the neck; nothing can more disfigure him than a short frizzled mane: it even alters, apparently, the shape of the neck, and when once in this situation, it will take twelve months to grow of proper length. The mane of a horse may be combed two or three times a day, as a thin mane looks well; but his tail, if well proportioned and elegant, should not be combed oftener than twice a week.



GOOD AND BAD EYES.

THE eye is an organ of more use and more value than any that belongs to the horse, and should always undergo an examination by a purchaser with the

greatest attention and minuteness. Nothing can more affect his value than the want of vision; as any elegant horse, that would readily command in cash two hundred dollars, if blind, in all probability, would be well sold at fifty dollars, which plainly proves the necessity and importance of using on this subject the greatest caution.

To give a full description of the anatomy of a horse's eye, would take up more room and time than can at present be devoted to this topic: the reader must be content with a description of those parts most familiar and most important.

The eye is the organ of sight, whereby the ideas of all outward objects are represented to the common sensory; its form is a convex globular, covered by its proper lids, and enclosed within an orbit or socket: the eyelids preserve the eye from dust or external injury, and an expansion of the muscles and skin, the inner membrane being of an exquisite contexture, that it may in no manner hurt or impair the surface of the eye: their edges have a cartilaginous or gristly rim, by which they are so fitted as to meet close together at pressure; the orbit or cavity in which the eye is situated, is lined with a very pliable, loose fat, which is not only easy to the eye in its various motions, but serves to keep it sufficiently moist, as the *lachamalia* glands, seated in the outer corner of the eye, serve to moisten its surface, or wash off any dust or dirt that may happen to get into it: at the inner corner of the eye, next the nose, is a carbuncle, which some are of opinion is placed to keep that corner of the eye from being entirely closed, that any tears or gummy matter may be discharged even in time of sleep, or into the *punctua lachamalia*, which are little holes for the

purpose of carrying off any superfluous moisture or tears into the nose: the eye has four coats or membranes, and three humours; the first membrane is called *tunica adnata*, and covers all that part of the eye that in a man appears white, but in a horse is variegated with streaks and spots of brown, and being reflected back, lines the inside of the eyelids, and by that inversion becomes the means to prevent motes, dust, small flies, or any extraneous matter getting behind the eyeball into the orbit, which would be extremely dangerous: this coat is full of blood vessels, which appear in little red streaks on the human eye when inflamed, and when there is but little white in the eyes of horses, they appear fiery, and the eyelids, when opened and turned back, look red: the second coat has its forepart very strong and transparent, like horn, and is therefore called the *cornea*; and the other part, which is opaque and dark, is called the *schlerotis*: under the *cornea* lies the *iris*, which in a horse inclines to cinnamon colour: the middle of this membrane, or coat, is perforated for the admission of the rays of light, and is called the pupil: under the *iris* lies the *processes ciliares*, which go off in little rays, and in a sound eye are plainly to be seen. As often as these *processes* contract, they dilate the pupil, which may always be observed in places where the light is small; but in a strong light, the circular fibres of the *iris* act as a sphincter muscle, and lessen the size of the pupil; and therefore a dilated and wide pupil, in a strong light, is generally an evidence of a bad eye. Under the *schlerotis* lies the *choroides*, which is the third coat of the eye: in men it is of a dusky brown but in horses the greater part of this coat is white, which enables them to see bodies of all colours better than men in the night, as white reflects all colours

But horses and other animals that feed on grass, have some parts of this membrane of a light green, which enables them to see with little light, and makes grass an object that they can discern with greatest strength, and therefore it is sometimes called *tunica uvea*, from its resembling the colour of a grape. The innermost or fourth coat is called the *membrana retina*, which is only an expansion of the optic nerve upon the *choroides*, and encompasseth the glossy humour like a net. By the continuation of the rays of light upon the fine filaments of this membrane, all the external images are conveyed by the optic nerves to the brain. Within the coats of the eye are seated the three humours that chiefly compose the eyeball; the first is the aqueous or watery humour, which lies foremost and seems chiefly as a proper medium to preserve the crystalline humours from injuries in case of wounds, bruises, or any other external cause. Behind the aqueous humour lies the crystalline lens, in a very firm membrane called *arena*, being like a spider's web—its use is to refract the rays of light that pass through it, so that all the rays proceeding from the same point of any object, being first refracted on the *cornea*, may be united on the *retina*—the vitreous humour lies behind the crystalline, being concave on its foreside to make a convenient lodgement for the crystalline, and its hinder part convex agreeable to the globular form of the eye, upon which the *tunica retina* and *choroides* are spread: this humour possesses a space larger than the other two, and being of a hue like a light coloured green glass, is a proper medium, not only to keep the crystalline humour and the *retina* at a proper distance from each other, but by its colour to prevent the rays of light falling too far

cably upon the latter, which might weaken or impair the sight.

The eyes of horses differ so widely in their appearance, that the best judges will be sometimes mistaken as to their power of vision; but I shall here recommend such modes of examination as will rarely deceive, having already described that organ fully, when in its most perfect state.

For the purpose of making a fair trial of a horse's eyes, that you suspect to be bad, and to ascertain their quality,

1st. Have him confined in a dark stable about fifteen minutes, then led hastily out into a strong light: if he winks fast, wrinkles his brows, throwing his head up as if desirous of receiving more light, and moves his ears backwards and forwards slowly, in an unmeaning manner, his eyes are not good.

2d. If his eyes appear sunk, with the lids shrivelled or very much swelled, it is a proof they have received an injury.

3d. If the ball of the eye appears covered with a film, or the remains of one about the corners, with the pupil large and light coloured, without occasionally contracting with a look wild and vacant, his eyes are diseased.

4th. If he can be rode against a tree or any other object which he should avoid, and which should alarm him, his eyes are bad.

5th. If when moved he lifts his feet high and awkwardly, and appears not to know where he is about to place them, you may immediately conclude he is blind.

6th. If when rode over small gullies or old corn ground, he blunders much, and requires the constant attention of the rider to guide him, his eyes are not good.

7th. If you shake your hand near his eyes in such a manner that he cannot feel the wind from it, and he pays no attention to it, by winking quick, and moving his ears, his eyes are such as should not be made choice of.

8th. If at night, when you approach him with a candle, and the pupil of his eye looks large, of a light blue colour, without having near its middle, and on the upper part, little rough spots, of a dark brown colour, resembling moss, or if the pupil contains large white opaque lumps, the horse is either blind or occasionally subject to blindness, and should be avoided by a purchaser.

The eyes of some horses are very subject to films, which have been sometimes removed by large bleedings, or the use of double refined loaf sugar, or glass bottle, powdered. Eyes thus affected are much to be dreaded, as it is very difficult to discover them. One hard ride will make a horse blind; and one large bleeding will remove the film. To detect such eyes, examine minutely the corners, as the film leaves those parts of the eye last, and will appear there, when it has been removed from the middle of the eye for several days.

The eyes of a horse are never too large, but very frequently too small; and when shaped like a pig's, are neither durable nor handsome, and form a serious objection. The wall or white eyes are truly valuable, being much hardier and less subject to disease than eyes of any other description; for who ever recollects to have seen a horse blind, or even with diseased eyes, that had wall eyes? and unquestionably they can see better in the night than a horse without them.

The eyes of a horse should be large, round, full, lively, dark coloured, clear, and shining, that you may see far into them; and when moving, but little of the white should appear. Dealers in those animals are very apt to endeavour to lead a purchaser from any defect he by chance may discover about a horse, to some part without fault, or some of his best parts; and as to eyes, speak of them as if they were of little or no consequence. Purchasers should always be on their guard when dealing with men that possess so much artifice and cunning.



MOON EYES.

WE sometimes observe the eyes of a horse to change colour, and to vary in appearance monthly. Eyes thus affected, are called moon eyes, from the prevailing opinion that the affection increases or decreases with the course of the moon; insomuch that in the full moon the eyes are muddy, discharging a thin ichorous water so sharp as sometimes to excoriate the skin, and at new moon clear up again. At first appearance of this disease, the eyes are much swelled, and very often shut, and the whole eyeball of a muddy brown; the veins of the temple, and near the eyes, appear remarkably full of blood, and both eyes are seldom affected at the same time. Large bleedings, and the eyes washed frequently in cold water, give temporary relief; but this disease is the forerunner of a cataract, which seldom admits of a cure; the cases generally end in blindness of one, if not both eyes.

The eyes of horses are very frequently wounded and injured by blows, flies, accidents, &c. which can always be distinguished from diseased eyes by a proper examination. To perform a cure, when thus injured, wash them three or four times a day in clean, cold spring water, after which repeat the washing, adding a small quantity of sugar of lead to the water, when the eye gets strong enough to open of its own accord, in the light. Should a film appear on the surface, (which is absolutely necessary, if the eye has received a wound, before it can heal,) take of double refined loaf sugar, or glass bottle powdered to a fine dust, a small quantity in the end of a quill; blow it in the eye affected, every third morning for a week: bleed at least three times within the week, taking about half a gallon of blood at each bleeding; if the horse is not disposed to go blind, the cure will in a short time be completed.



STARTING.

HORSES, as well as men, sometimes acquire bad habits, of which they can but seldom divest themselves. Starting is one among the worst habits a horse can possess, and has a tendency to reduce his value at least one fourth, in consequence of endangering the life of any person who may back him. A good rider has sometimes been thrown by his horse in starting, that would have defied his agility in any other way.

A rider never can guard against a starting horse, as he gives no notice of his intentions, by the moving of

his ears, eyes, manner of going, &c. as they generally do in rearing, jumping, kicking, sullenness, and such vices. Some few horses are broke of starting by mild means, others by cruel treatment; but whoever engages in it, at least runs the risk of breaking his own neck before his object is accomplished.

A horse subject to starting, labours under an ocular deception, or rather an optic defect, seeing nothing perfectly, or in proper shape or colour; and can as easily make a scare-crow of a little bush or chunk, that may happen to lay in his road, as the most frightful object that could meet his sight.

To ascertain that a horse starts, is very easy indeed. Mount him yourself, ride first slow, and then fast, towards and by such objects as are offensive to the eye, and you will readily discover if he possesses that bad habit.

Some horses that are free from this objection, will notice particularly all objects they meet, and may sidle a little; but a starting horse, on approaching any object that may displease him, whether frightful or not, will either suddenly spring from one side of the road to the other, jump back, or when going in a full gallop, stop suddenly, turn round, and run in an opposite direction from the one he was going. Such horses are neither agreeable or safe for any kind of service.

STUMBLING.

THE stumbling of a horse may be either natural or produced by accidents, such as splint, wind galls, sinew strains, shoulder sprains, withers injured, &c. &c. but whether produced by accident or natural defect, cannot be remedied. All horses, and particularly those that go well, stumble more or less; but there is a very wide distinction between a light tip or touch on the foot, and a stumble that will bring a horse and sometimes his rider flat in the dirt. Horses given to this practice, are very much lessened in value, and can never be rode by any person aware of his bad quality, without being in pain, dreading every time he lifts his feet, that all will be prostrated in the dust.

To ascertain if a horse stumbles,

1st. Examine well his knees, to discover if they are scarred, or the hair knocked off.

2d. Take him amongst uneven ground, small gullies, or old corn ground, and let him be rode with the bridle hanging slack upon his neck, in all the different gaits he has been accustomed to, and if he is in the habit of stumbling, he will very soon make a sufficient number of low bows to convince you of the fact.

3d. When a horse stumbles and immediately springs off, appearing alarmed, it is a proof that he is an old offender, and is under the apprehension of having one other flogging added to the great number he had, no doubt, received for the same fault. Such a horse I consider unsafe, and therefore cannot recommend him to purchasers; he being not so good, even for a slow draft, as one possessing more activity.

SPAVIN.

A SPAVINED horse may be considered as one completely ruined, for a permanent cure can rarely be effected, if attempted, even on its first appearance.

The spavin is a lump, knot, or swelling, on the inside of the hock, below the joint, that benumbs the limbs, and destroys the free use of the hind legs. It causes a horse to be extremely lame, and to experience, apparently, very excruciating pain.

In the purchase of a horse, great respect should be paid to his bringing up his hind parts well, as a spavined horse never makes a full step with the leg affected; also to the shape of his hocks, in order to discover if there is any knot or unnatural prominence about the joint, which is an evidence of the spavin. When a horse is thus diseased, he is unfit for any kind of service, even the meanest drudgery, being in constant pain, and unable to perform. Horses sometimes have the spavin, when there is no lump apparent near the joint, the disease being seated in the joint. To detect such spavin, and to prevent a cunning fellow (who may have given the animal rest, blistered and bathed the part with double distilled spirits, and formed a temporary relief,) from imposing on a purchaser, have the horse rode in three quarters speed, about one mile out and back, occasionally fretting, cracking, and drawing him up suddenly and short; after which let him be rode in cold water up to the belly; then place him in a stall without interruption, for about half an hour, by which time he will be perfectly cool; then have him led out, and moved gently: if he has received a temporary

cure of the spavin, he will show lameness. A bliste of Spanish flies applied to the part affected (after shaving off the hair) with a bath of strong spirits or vinegar, and a week's rest, will frequently suspend the lameness produced by the spavin for a time, but a radical cure may not be expected.



CRIB BITING.

CRIB BITING is one amongst the number of bad habits to which some horses are addicted. It consists in his catching hold of the manger, grunting and sucking in wind, until he is almost ready to burst. To discover this vice, it is only necessary to have a horse fed: whenever they eat, at least one half of his victuals is wasted, by their catching hold of the manger, grunting, straining, and swallowing large quantities of wind every two or three mouthfuls, which produces the cholic and other distressing diseases.

Whenever this very bad habit is acquired, it is practised as long as the animal lives. Many experiments and fruitless attempts have been made to remedy it, but without success. An elegant horse, when once he becomes a crib biter, is reduced in value to little or nothing. He always looks hollow, jaded, and delicate, and is incapable of rendering service in any situation.

BROKEN WIND

BROKEN WIND is one amongst the number of incurable diseases to which the horse is subject. When affected with this disease, he is disagreeable to his rider, and is of but little value, however beautiful or elegant he may be in his appearance. All the boasted pretensions of farriers to cure, are vain and frivolous, since their utmost skill, now and then, can only palliate the symptoms, and mitigate their violence.

It is easy to discover a broken winded horse. By giving him a little brisk exercise, he will draw up his flanks and drop them suddenly, breathe with great difficulty, and make a disagreeable wheezing noise. The seat of the disease appears, from dissection, to be in the lungs; the heart and lungs being found of twice their natural size, which prevents their performing their office with ease, in the action of respiration.

Broken wind is sometimes produced in a horse by excessive fatigue, heavy drafts, sudden changes from heat to cold, and other cruel treatment. It would be advisable to dispose of such horses at any price, as they are not worth their feeding.

This complaint, I believe, does not admit of perfect cure: but by much care may be greatly relieved. The food should be compact and nutritious, such as corn and old hay. Carrots are excellent in this case, as are parsnips and beet roots, probably on account of the saccharine matter they contain. I have heard that molasses has been given in the water (which should be in very small quantities) with very great success. Some have used tar water; others praise

the effects of lime water; but the greatest dependence should be in very sparing supplies of substantial food. The exercise ought to be regular, but never beyond a walking pace. If the symptomatic cough should be troublesome, take away about three quarts of blood every other day.



STRING HALT.

THE string halt affects horses in their hind legs, and consists in a false action or involuntary use of a muscle, which twitches one of the legs almost up to the belly, and sometimes both. The string halt is produced by a muscle being over strained, or a violent blow on the hind parts. Good rubbing, and baths of warm vinegar and sweet oil, afford momentary relief, but a permanent cure may not be expected. A horse thus injured, is incapable of faithfully performing a journey, although he may be rode four or five miles without appearing to sink with fatigue. Such a horse is very objectionable, being uneasy to the rider, and must give pain to every person who is in the habit of seeing him rode.

CHEST FOUNDER.

THE chest founder appears to be a disease but little understood by farriers in general; they are, however, not backward in offering many remedies, and speak of some with much confidence, when they propose performing a cure. But experience has proved, beyond the possibility of a doubt, that the chest founder is one of those dreadful diseases to which the horse is subject, that admits of no cure. I can here be of more use, by speaking of its seat, and describing its symptoms to a purchaser, than by pretending there exists, for that disease, a specific medicine, or propose its use to the owner of such an unfortunate animal.

The chest founder is sometimes produced by violent exercise on a full stomach, and drinking large quantities of cold branch water; by the use of mouldy bran, corn, or oats, or by eating large quantities of green food, such as oats, wheat, peas, &c. while performing hard labour.

From dissection, it appears that the seat of the disease is in the lungs; the heart and liver are also considerably enlarged, insomuch that there is not room for them to perform their office with ease. The liver, lungs, diaphragm, and surrounding parts, are all covered with large brown spots, and are much inflamed.

A horse that is chest foundered, will straddle or stake with his fore legs, showing an unwillingness to bring his feet together; and if they are placed near each other, he will not permit them to remain so for a minute. Indeed they are frequently twelve or

eighteen inches apart, which is caused by a fulness, and continual uneasiness about the chest: the cavity being too small to contain the lungs, &c. in their enlarged situation with ease.

The hind legs are free from the palsied appearance of those before, and it is not difficult to distinguish it from a common founder, as it is wanting in all its symptoms, except the stiff and numbed appearance of the legs.

Large bleedings and half an ounce of aloes, given internally in a ball, have sometimes afforded momentary relief. No effectual remedy has yet been discovered. A horse labouring under this disease, is worth but little more than his board, as he is unable to bear fatigue, or undergo severe service.



NARROW HEELS,

Is a disease that often produces lameness without the master of the horse knowing from what cause it proceeds: often examining his legs, cleaning his hoofs, paring the frogs of his feet, &c. &c. without paying any respect to the shape of the horse's heels, which are always close together and unnaturally shaped.

A horse with narrow heels is unfit to travel, as he is tender footed, and goes cramped, short, and is always subject to lameness, more or less.

Narrow heels is the effect of shoes being permitted to remain on a horse that is not used, for three or four

months, which cause the heels to grow together, pinching and confining the coronet.

The cure is simple, though tedious. Have his shoes taken off and his feet cut down as small as possible, without injuring the quick; then turn him out upon a marsh or low ground, where his hoofs may be constantly moist for three or four months, and his heels will expand, his hoofs again assume their natural shape, and the horse will be fit for any kind of service.



SPLINT.

THE splint is a hard lump or excrescence that grows upon the fore legs of a horse between the fetlock and the knee. It is unpleasant to the eye, but seldom does injury, unless situated on the back of the leg and immediately under the large tendons, in which case lameness is always produced, and the cure rendered difficult.

When the splint is situated in the usual place, and grows so large as to be unfavourable to beauty—to remove it, bathe the part with hot vinegar twice a day, and have the knot or splint rubbed with a smooth round stick, after bathing for ten or fifteen minutes; by the expiration of a week the knot will perceptibly decrease in size, and finally, in a short time will disappear.—But should such means not have the desired effect, shave off the hair over the lump, and apply a blister of Spanish flies, which in a short time will effectually remove it.

The splint, when first making its appearance, will cause a horse to limp a little: and, as he advances in years, may stiffen him, and cause him to stumble. But I have never known any serious injury to result from such an excrescence, unless placed beneath the large tendons.



LAMPASS.

ALL young horses are subject to the lampass, and some suffer extremely before it is discovered.

It is a swelling or enlarging of the gums on the inside of the upper jaw: the growth is sometimes so luxuriant as to prevent a horse from eating with any comfort. The cure is simple; and after being performed, a horse will improve in his condition with great rapidity.

Take a hot iron, flat, sharp, and a little crooked at the end, burn the lampass out just below the level of the teeth, using great care to prevent the hot iron from bearing or resting upon the teeth. After the operation is performed, the horse should be given a little bran or meal, with a small quantity of salt in it.

Some farriers have recommended cutting for the lampass, which only gives momentary relief, and would require the same operation to be performed every three or four months; but when it is once burnt out, it never again makes its appearance.

WIND GALLS.

WIND GALLS are spongy and flatulent humours, that make their appearance on both sides of the legs, just above the pastern joint or fetlock. It is seldom that a horse is found entirely clear of them, particularly about the hind legs, if he be much used.

They are produced by hard usage, strains, bruises, &c. &c. of the back sinews or the sheath that covers them, which by being over-stretched, have some of their fibres ruptured; whence probably may ooze out the fluid which is commonly found with the included air.

When wind galls make their first appearance, they are easily cured by a bath and bandage. Boil red oak bark to a strong decoction, add some sharp vinegar and a little alum, let the parts be fomented twice a day, warm as the hand can be held in it; then take a woollen cloth, dip it in the bath, and bind the ankle up, tight as possible, without giving pain to the horse.

Should this method not succeed, after a thorough trial, the swelled or puffed parts may be opened with a sharp knife; but blistering with flies is less dangerous, and generally attended with equal success.

Wind galls give to a horse a gouty and clumsy appearance; but I have never known lameness produced by them, or any other injury, except that of stiffening his legs as he advances in years. They furnish strong proof that the animal has rendered much service

FARCY.

THE farcy is a contagious disease among horses, and is more to be dreaded than any malady to which they are subject.

It sometimes makes its appearance on a particular part, while at other times it spreads its horrid ravages through the whole system. It may be found in the neighbourhood of each blood vessel, following the track of the veins, and when inveterate, appears to thicken their coats and integuments. Its characteristics are a fulness and hardness of the veins, a number of small lumps or buds on the limbs or lower parts of the body, which at first appearance are hard, but soon turn into soft blisters, and which (when broken) discharge an oily or bloody ichor, and turn into foul, spreading ulcers. In some horses it appears in the head only, in others near the external jugular or plate veins, inside the fore arms, on the hind parts, near the large veins inside the thighs, about the pasterns, and particularly about the knees of the horse, which are frequently swelled until they appear deformed.

The poison of the farcy appears to be slow in its operation, as a horse will frequently linger and dwindle away for six or nine months, and the ulcers increase in number and size, until the flesh appears almost disposed to fall from the bones, before life is destroyed. The appetite of a horse thus diseased is generally good to the last, but his hair looks dead, and his eyes sad and desponding.

The farcy, in its first stage, readily admits of a cure, but after running on a horse for a length of time,

and the absorbents or lymphatics about the ulcers become inflamed from an absorption of poisonous matter, the cure is rendered extremely difficult.

Whenever the farcy rises on the spine, it shows great malignancy, and is considered dangerous, particularly to horses that are fat, and full of blood. When it is general in the system, as is sometimes the case, it rises on several parts of the body at once, forming many large and foul ulcers, causing a profuse running of greenish corrupted matter from both nostrils, and soon terminates the existence of the animal by general mortification.

In the lower limbs the farcy sometimes remains concealed for a great length of time, and makes so slow a progress that it is often mistaken for a wound, or some other disease. A single bud will sometimes appear opposite the pastern joint, and run upwards in an uneven and knotty form; and unless some steps are taken to check its progress, it will slowly steal upon the animal until it becomes general in the system, and finally centres in the lungs; shortly after which a gangrene ensues, and the horse is unburdened of a life that is not only painful to himself, but to all that behold him.

To effect a cure in this distressing disease, in its first stage bleed three times the first week, taking half a gallon of blood at each bleeding, feed principally on bran, oats, or any food easily digested, and the long food green, (if to be had;) remove all filth from or about the stable, taking care to keep it neat and clean afterwards; give three mashes a week, of bran, scalded with sassafras tea, one table spoonful of powdered orimstone, and one tea spoonful of saltpetre. (not per-

mitting the horse to drink for six hours afterwards,) take half an ounce of asafœtida, which can be procured in any apothecary's shop; wrap it in a clean linen rag, and nail it in the bottom of the manger in which he is fed: all his drink must be equal quantities of sassafras boiled in water to a strong decoction, and half an ounce of asafœtida should be placed in his watering bucket in the same manner as directed for the manger; the buds or ulcers should be washed once a day with blue-stone or copperas water, and if the knees or ancles are swelled, spread on a piece of buckskin mercurial ointment, and bind them up as tight as possible without giving pain.

The second week bleed twice, taking half a gallon of blood each bleeding, if the horse is in tolerable order; or if poor, only half the quantity; give the same number of mashes as directed for the first week, also the same drink, taking care to renew the asafœtida in the manger and bucket, should it be sufficiently exhausted to require it.

The third week bleed but once, taking one quart of blood; in other respects observe the same treatment as directed for the first and second weeks. The horse should be moderately exercised about a mile, twice a day, and occasionally should be offered a little homony, as a change of food, to keep up his appetite.

By the time your attentions for the third week expire, if the disease is only local, it will not only be removed, but the plight of the horse will be much improved.

When the farcy make its appearance epidemically, the cure is rendered difficult, and will require the aid of more active medicine. Prepare and give to a horse

thus diseased, a ball, every night for a week, composed of twenty-five grains of calomel, a quarter of an ounce of powdered fennel seed, a small quantity of syrup of any kind, and as much crumb of loaf bread as will make a ball about the size of an English walnut; all buds or ulcers should be washed clean in blue-stone water, after which they should be well rubbed around with mercurial ointment once a day; a narrow pitch plaster should be laid on at the joining of the head and neck, in the direction of the throat latch, for the purpose of taking off the hair, which will happen in two or three days; after which, a lump of mercurial ointment, about the size of a hickory nut, must be rubbed on the naked part, amongst the large glands of the throat, until it is entirely absorbed, every night and morning, until the expiration of the week; added to which, the treatment generally may be the same as before recommended in the more simple stage of the farcy, with these exceptions;—the drink should never be cold, but the air taken off, or milk warm; the mashes without sulphur, during the week the balls are given, as the sulphur counteracts the effects of the calomel and ointment; he should not be bled, and great care should be used to prevent his getting wet, and catching cold in any way while under the course of physic.

At the expiration of the first week, stop with the balls and ointment for a week, adding sulphur to the mashes, as directed in the first stage of farcy. At the expiration of the second week, stop with the sulphur, and again commence with the balls and ointment. Go on in this manner, continuing to change the medicine each week, until the cure is performed.

It may sometimes happen that a horse's mouth will become sore before the expiration of a week, when taking the balls and using the ointment. Whenever this is discovered, stop with the balls, and add sulphur to the mashes, which will readily remove the soreness about the mouth.

The farcy is so contagious that it often destroys horses of every description upon a plantation, and leaves the plough of industry standing still in the farmer's field. Not long since, a gentlemen in the county of Sussex, lost upwards of forty horses by this fatal disease, without being able to save one. For the benefit of those who have more than one horse, I would recommend the use of asafœtida in the manger, watering bucket, and to the bridle bit, to prevent the farcy from dealing out destruction to their whole stock. I have made a fair experiment with this simple preventive, by placing a horse violently affected with it, and which fell a victim to it, in the same stable with one in health, without any ill consequences resulting from their contiguous situation.

The farcy has visited several farms within the United States, with effects so dreadful, as not only to destroy every one of the species, without respect to age, but even occupied in triumph the walks and resting places of its prey. Nor could the disease be diverted from its stand, or completely eradicated, until stables, shelters, pens, litter, straw, &c. &c were entirely consumed and reduced to ashes.

RING BONE.

THE ring bone partakes of the nature of the spavin, and frequently proceeds from the same cause. It makes its appearance on the lower part of the pastern, and sometimes immediately opposite the coffin joint. It is a hard and bony substance, and generally reaches half way round the ancle, which gives to the ancle an unnatural appearance, and causes the horse to go stiff and lame. Its name has proceeded from its resemblance to a ring. It seldom admits of a cure, consequently a horse diseased with it is worth but little.

When the ring bone first makes its appearance, blisters of flies have sometimes been employed with success. But after growing to full size, and remaining some length of time, to offer a remedy would be deceitful and presumptuous.

Remedy.—A strong preparation of corrosive sublimate added to Spanish flies and Venice turpentine, and mixed with hog's lard, will often dissolve a ring bone, &c.



FOUNDER.

THE injury sustained by horses, called founder, is sometimes the effect of the cruelty of his master, and at other times brought on by injudicious treatment; but it most frequently produced by carelessness, or

a want of knowledge of the treatment necessary to those excellent animals on a journey.

Although the horse is endowed with the strength and powers of the lion, yet he seldom exerts either to the prejudice of his master. On the contrary, he shares with him in his labours, and seems to participate with him in his pleasures. Generous and persevering, he gives up his whole powers to the service of his master; and though bold and intrepid, he represses the natural fire and vivacity of his temper, and not only yields to the hand, but seems to consult the inclination of his rider.

But it must continue to be a matter of regret to every feeling mind, that these excellent qualities should be so often shamefully abused in the most unnecessary exertions; and the honest labours of this noble animal thrown away in the ungrateful task of accomplishing the purposes of an unfeeling folly, or lavished in gratifying the expectations of an intemperate moment.

A horse may be foundered by excessive hard rides, permitting him to plunge deep into cold water, while hot and sweating, and drinking his fill of cold pond water, eating large quantities of new corn and fodder, and then briskly exercised; over feeding with bran alone whilst performing hard labour, drinking plentifully at every branch in travelling, feeding with more than a horse can eat after being half starved, violent exercise on a full belly, or not permitting a horse who has travelled in a hot sun all day, to cool thoroughly, before he is given as much as he can eat, drink, &c.

Symptoms of a Founder.—The symptoms that indicate an approaching founder, are so few and so common, that the most ignorant persons will rarely be

mistaken. Great heat about the legs, pasterns, and ears, a soreness in the feet, together with a stiffness so great in all his limbs that the animal frequently refuses to move, unless force is used; his flanks and lower part of his belly draws up, his hide becomes bound or tight, his legs thrown a little more forward than in his usual or natural position; a constant thirst, and very often a considerable swelling of the ancles, &c. &c.

Remedy for a Founder.—So soon as you are convinced that your horse is foundered, take from his neck vein at least one gallon of blood; give a drench of one quart strong sassafras tea, one table spoonful of saltpetre, and a quarter of an ounce of asafœtida, and do not permit him to drink for five or six hours; at the expiration of which time, should he not be evidently better, repeat the bleeding, taking half a gallon of blood, and give another drench: at night offer him some bran or oats, scalded with sassafras tea, and if it can be procured, let him have green food, fresh from the field, for it has the happy effect of opening the bowels, and cooling the system: his feet should be nicely cleaned out, and stuffed with fresh cow manure: his drink should be at least one half sassafras tea, with a small handful of salt thrown therein.

By the morning, should the horse be better, nothing further is necessary, only being careful not to over feed him. But should there be no change for the better, tie a small cord just above his knees, and with a lancet or fleam bleed in a vein that runs around the coronet, just above the hoof; take from each leg a pint of blood: give a pound of salts dissolved in three half pints of water, in form of a drench; keep his feet stuffed with fresh cow manure, and bathe his legs with

equal parts of sharp vinegar, spirits and sweet oil or lard. By attention to these directions, in two or three days the horse will again be fit for service.

A horse in this unpleasant situation requires great attention. Whenever they are foundered, they search for a bank of manure to stand on, which should always be prevented, as its heat increases the fever.

Horses slightly foundered, have sometimes been cured in a few hours, by standing them in pond water or mud, or by bleeding in the mouth, but those remedies are uncertain, and are not so much to be relied on as those first recommended.

A foundered horse is generally very much reduced in flesh, before a cure is effected; and is always more subject to founder afterwards.

Large ridges on the hoofs, or a turning up of the feet, are strong indications of old founders or other injuries.



COLIC OR GRIPES.

THE colic is a disease to which the horse is very subject; and as often proves fatal, in consequence of improper treatment, as any disease attendant on that animal.

It may be produced by improper feeding, watering, or riding, and sometimes by a want of energy in the stomach and bowels, occasioning a spasmodic constriction of the intestines, and a confinement of air. Some horses are naturally disposed to colic, while

others, even with improper treatment, are seldom or never attacked with that dangerous disease.

The pangs of the colic appear so excruciating, and all the symptoms so violent, as to alarm, generally, those unaccustomed to it, and cause them to be apprehensive of dangerous consequences; but by using the remedies I shall here offer, the cure will be made easy, and the animal speedily relieved from this painful situation.

Symptoms.—The symptoms of the colic commence with great restlessness and uneasiness in the horse's manner of standing, frequently pawing, voids small quantities of excrement, and makes many fruitless attempts to stale: kicks his belly with his hind legs: often looks round to his flanks, groaning, expressive of the pain he feels: lies down, rolls, gets up again, and sometimes for a moment, appears to find relief. But the pain soon returns with double violence: his ears are generally cold, and he often sweats about the flanks and shoulders: his body swelled, and he frequently shows a disposition to lay down in great haste.

A TABLE for distinguishing between the Colic or Gripes, and inflammation of the Bowels of Horses, by the symptoms that mark the character of each.

Spasmodic or Flatulent Colic.

1. Pulse natural, though sometimes a little lower. (1)

2. The horse lies down and rolls upon his back.

3. The legs and ears are generally warm.

4. Attacks suddenly, is never preceded, and seldom accompanied by any symptoms of fever.

5. There are frequently short intermissions

Inflammation of the Bowels.

1. Pulse very quick and small (2)

2. He lies down and suddenly rises up again, seldom rolling upon his back.

3. Legs and ears generally cold.

4. In general, attacks gradually, is commonly preceded, and always accompanied by symptoms of fever.

5. No intermissions can be observed.

(1) *Pulse Natural*.—When in health, the pulsations or strokes are from thirty-six to forty in a minute; those of large, heavy horses being slower than those of the smaller; and those of old ones, slower than those of young animals. When either are just off a quick pace, the strokes increase in number; as they do if he be alarmed or animated, by the familiar cry of the hounds.

(2) *Pulse very quick and small*.—Fever, if the simple or common kind, usually increases the pulsations to double the healthy number. As the fever increases in violence, and particularly in cases of inflammation of the bowels, the pulse beats still higher, and reaches to a hundred in a minute, or more. To ascertain either state, the attendant should apply the points of his fingers gently to the artery which lies nearest the surface. Some prefer consulting the temporal artery, which is situated about an inch and a half backward from the corner of the eye. Others again, and they are the greater number, think it best to feel it underneath the edge of the jaw bone, where the facial artery passes on under the skin only to the side of the face. In either case, too great pressure would stop the pulsation altogether; though by so trying the artery against the jaw bone, will prove whether it be in such a rigid state of excitement as attends high fever; or elastic and springy, slipping readily from under the finger, as it does when health prevails, and the strokes follow each other *regularly*. The presence of high *fever* is further indicated by a kind of *twang*, or vibration, given by the pulse against the *finger points*, resembling much such as would be felt were we to take hold of a distended whip, cord or wire between the fingers and cause it to vibrate like a fiddlestring, sharply. Whereas, in

health, a *swell* is felt in the vibration, as if the string were made of soft materials, and less straitened. Languid or *slow pulse*, and scarcely perceptible in *some* of the beats or strokes, indicates lowness of spirits, debility, or being *used up*: if this languor be felt *at intervals* only, a few strokes being very quick, and then again a few very slow, this indicates *low fever*, in which bleeding would do no harm, &c.—[*A. Turf. R. & S. Mag.*]

REMEDIES.—*Number 1.* Take from the neck vein half a gallon of blood; take of laudanum one ounce, or mint tea one quart, milk warm; mix them well in a bottle, and give the contents as a drench; let the horse be well rubbed under the belly, and prepare and give an injection of meal, water, molasses, salt, and hog's lard, milk warm.

Number 2. Take of mint tea one and a half pints; gin, or any spirituous liquor, half a pint; mix them well in a bottle, and give them as a drench, taking care to rub him well. Should it not have the desired effect in fifteen minutes, repeat the dose.

Number 3. Take of camphor a quarter of an ounce oil of turpentine half an ounce, mint tea one pint; mix them in a bottle, and give them as a drench. Confine the horse in a close stable, cover him with three or four blankets, and under his belly place a large tub of boiling water, which will readily throw him into a profuse sweat, and relieve him from pain.

Number 4. In addition to the above, clysters ought to be administered, by injecting the following ingredients, viz.: water half a gallon, salt one handful, oil of any kind one pint, molasses one pint; mix the whole, and inject it; and repeat it every half hour, until the bowels are well opened.

SCRATCHES.

THE scratches is a disease which soon places a horse in such a situation as to render him unfit for any kind of service. When it is permitted to run upon a horse for a length of time, without any remedy being applied, the ankles and legs swell very much, and lameness is produced in so great a degree, that he is scarcely able to move.

The scratches are produced from many different causes, as hard riding, dirty stables, legs left wet at night without being rubbed, standing in his own manure or mud, in the stall where he is confined, &c. &c. Although much inflammation may appear, and the disease discover much inveteracy, the cure is not difficult.

REMEDIES.—*Number 1.*—Remove the horse to a clean stall: with strong soap suds wash his legs and ankles nicely; clean out his feet; then wash every part, inflamed or sore, in strong copperas water, twice a day, until the cure is performed: take half a gallon of blood from the neck vein, and give a mash twice a week, of one gallon of bran, one tea spoonful of saltpetre, and one table spoonful of powdered brimstone. Great attention should be paid to the cleanliness of the stable.

Number 2. After the horse is placed in a clean stall and his legs and ankles nicely washed with warm soap suds, take of blue-stone, one ounce; of alum, four ounces, to which add half a gallon of strong decoction of red oak bark, stir them together until the alum and blue-stone are dissolved; then wash the cracks, sores, or inflamed parts, twice a day, and the

cure will be effected in a very short time. Light or green food would be preferable to any other, for a horse thus diseased, until the cure is performed.

Number 3. After washing the legs and ankles clean with soap suds, take of flower of sulphur or powdered brimstone, one table spoonful; hog's lard, one table spoonful; mix them well together, and anoint the sores and parts inflamed twice a day. A horse will get well much sooner confined in a clean stall, than by running at large.

Number 4. Boil poke-root to a strong decoction, and bathe the ankles twice a day. In all cases a clean stable will aid you much in making a quick cure of the scratches.



BOTS OR GRUBS.

THE bots or grubs are small worms that are found in the stomach; their colour is brown or reddish, and they seldom exceed three quarters of an inch in length. At one extremity they have two small hooks, by which they attach themselves, and the belly appears to be covered with very small feet. They are most frequently found adhering to the insensible coat of the stomach, and then they do not appear to cause any considerable uneasiness or inconvenience. Sometimes however, they attach themselves to the sensible part, and do great injury to that important organ, producing irritation, emaciation, a rough coat of hair, hide bound and cough. It is astonishing with what force these worms adhere, and how tenacious they are of life.

It is proved beyond doubt, by experiments made, that this worm, like the caterpillar, undergoes several changes. It is originally a fly, which deposits its eggs in the horse's coat, causes an itching, and induces him to bite the part. In this way he swallows the eggs, which by the heat of the stomach are brought into life, and are sometimes so numerous as to eat their way entirely through the stomach and destroy the animal. Indeed they seldom fail to attack a horse with great violence, whenever his stomach is empty, and endanger his life.

Numberless experiments have been made upon the grubs, after they have been taken from a horse that had died, to discover what medicine would soonest destroy their lives, that could be safely given. But all endeavours as yet upon that subject, have been fruitless. It appears that they will live in any medicine that can be given to a horse, nearly as long as they can live without eating. All the benefit that results from experience on this subject, to me, merely serves to break the hold and expel those dangerous worms, when they are so mischievously engaged.

After describing the symptoms attending the grubs I shall offer some remedies which have saved the lives of many horses.

Symptoms.—A horse attacked by the grubs, frequently lies down and looks round to his shoulders, groans, whips his tail between his hind legs, frequently turns up his upper lip, and has a very hot fever, which may be discovered by feeling his ears.

REMEDIES.—No. 1. Take of copperas two table spoonfuls; water milk warm, one pint; dissolve the

copperas, and give it as a drench. If the horse is not relieved in fifteen minutes, repeat the dose.

No. 2. Take of linseed or sturgeon's oil, one pint, and give it as a drench. If the horse is not relieved in fifteen minutes, repeat the dose.

No. 3. Take of molasses, one pint; milk, one pint: give it as a drench, and repeat the dose.

No. 4. Take of fresh meat of any kind (raw) half a pound, cut it into four or five pieces, and force it down the horse's throat; it will immediately induce the grubs to break their hold.

No. 5. Take two ounces of Æthiop's mineral and give it to your horse in his feed, and in a day or two afterwards give him a purge; then you may give him a decoction of bitter herbs, to prevent their return.

No. 6. Give your horse (after taking molasses and milk) a quart or two of fish or beef brine, as a drench. From recent experiments, salt appears to have the property of killing worms: these insects placed in a solution of this substance die immediately.

No. 7. Drench the horse with half an ounce of saltpetre dissolved in common water, and in about fifteen minutes drench with half an ounce of alum dissolved in like manner. Let the horse have no water for twenty-four hours after.

An active purge will be absolutely necessary immediately after the use of either of the above remedies. One pint of soft soap added to a pint of molasses, with a handful of salt, will answer very well. Repeat the dose, should it not operate in four or five hours.

HOOKS OR HAWS.

THE hooks or haws in a horse, is the growing of a horny substance upon the inner edge of the washer or caruncle of the eye, which may be found in the inner corner next to the nose. When this disease makes its appearance, the washer or caruncle is enlarged with great rapidity, and the ligament that runs along the edge of this membrane, becomes extremely hard, or like a cartilage, and whenever it arises to this state, it draws, compresses, and causes great pain to the eyes, produces a tightness of the skin, a stiffness of the hind legs, and finally a general spasmodic affection throughout the whole system.

As the eyes of a horse are often inflamed, and sometimes diseased, without their having the hooks, for the purpose of ascertaining the fact, take hold of the bridle, and raise the horse's head as high as you can with convenience reach: if he is diseased with the hooks, the washer or caruncle of the eye, while his head is raised up, will cover at least one half the surface of the eye ball. When this is the case, take a common sized needle with a strong thread, place on the horse's nose a twitch, to prevent his moving; then take in your thumb and finger the washer or caruncle of the eye, and pass the needle through it about a quarter of an inch from the outer edge, and inside the horny substance; draw it gently with the needle and thread, until you have a fair chance of performing the operation; then with a sharp knife cut the piece out, taken up with the needle, which must not be larger than one fourth the size of a four pence half penny:

wash the eyes for two or three mornings with salt and water, bathe his legs up to his belly in equal parts of warm vinegar, spirit and oil, or fresh butter, and give a mash of one and a half gallons of bran or oats, one table spoonful flour of sulphur, one tea spoonful saltpetre, and the cure will be performed in all probability in four or five days.

Great care should be taken not to cut too large a piece from the caruncle, as it disfigures the eyes, and sometimes produces blindness.

ON CUTTING OUT HOOKS OR HAWS.

“Before I was acquainted with this subject, two years ago, I had two fine young horses sacrificed to this mistaken and ruinous operation. Ignorant quacks do not know that the horse has a membrane peculiar to the animal, which is at pleasure drawn over the eye. The enlargement of this, by a fever, produces the appearance, which, in jockey slang, is called the hooks. Reduce the fever by depletion, such as bleeding plentifully, purging, &c. and have the horse well rubbed, and the hooks will disappear; that is, the membrane is restored to its natural size and office, which is to clear the eye from dust, &c. accidentally entering it. I need not mention the cutting out of this useful membrane unnecessary, as I have proved the uselessness of this operation, by restoring a horse without it a few days ago.

W. V. MURRAY ”

[*American Farmer.*]

STRANGLES.

THE strangles is a disease to which horses are very subject, particularly those that are young. It consists in a running at the nose, and an inflammation and swelling of the glands, about the under jaw and throat. It is sometimes attended with high fevers, destroys the appetite, causes a horse to look sad and dejected, and dwindle away in an astonishing manner. Sometimes the inflammation extends to the muscles of the tongue, and is attended with so much heat and pain, that until matter is found, the horse swallows with the utmost difficulty, unless his drink is held up to him.

The strangles proceed from many causes, violent colds, sudden changes of air or climate, extreme hard labour after habits of idleness, shedding teeth, or whatever may produce pain, or bring on a flux of humours at any critical time upon the throat and jaws, and like most other diseases, requires strict attention, for the cure to be performed in a short time.

Symptoms of the Strangles.—The approach of the strangles may be known by a dulness of the countenance, watery eyes, a distressing cough, running at the nose, glands enlarged beyond the jaws, loss of appetite, and a constant thirst, without being able to drink, unless the water is placed as high as his head, in its natural position.

Remedy.—Bleed four times within a week, taking from the neck vein half a gallon of blood at each bleeding; give a mash twice a week, of one gallon of bran or oats, scalded with one quart of sassafras tea, with the addition of one table spoonful of powdered brim

stone, and one tea spoonful of saltpetre. Take of asafœtida half an ounce, divide it, placing one half in his manger, the other in his watering bucket. Feed principally with green food, if to be had, if not, such as is light, cooling, and easily digested.



STONE OR GRAVEL IN THE BLADDER.

FORTUNATELY the stone is a disease not very common amongst horses; but whenever it makes its appearance, unless some remedy is immediately employed, its consequences are to be much dreaded. It consists in small gravel or stones being lodged in the bladder, which prevents a free discharge of urine, and produces the most excruciating pain. The horse will linger and pine away, until he can scarcely support the burden of life.

As the stone is a disease which has but seldom, if ever, struck the attention of farriers, I consider myself fortunate in being able to offer to the public a simple remedy, which has been employed with astonishing success by a gentleman in a neighbouring county. In one case, when the following remedy was used, three stones and a quantity of grit was discharged from the bladder.

Symptoms.—Frequent stretching, groaning, and many fruitless attempts to pass water, which will finally be discharged by a few drops at a time, with great apparent pain, a shrinking of the flesh, although the appetite is good, no fever, but a dull, sluggish, and sleepy appearance, wanting much in his usual spirits.

Remedy.—Take of marsh-mallows, water melon seed, and asparagus, of each two large handfuls, boil them in three quarts of water to one quart, and add one tea spoonful of saltpetre, and give the whole as a drench, after being nicely strained.

Take of sweet oil or fresh butter one-table spoonful, grease his sheath, and draw out gently and grease his penis, also grease the large seam from the penis up near the anus; and with the hand, bearing a little, stroke the seam downwards to the end of the penis, for ten minutes every hour, until the horse has a urinary discharge; which, in all probability, will take place in one or two hours after taking the drench. Should some blood be passed, it may be no cause of alarm, and will clearly prove there is gravel in the urinary passages. Repeat the drench in three hours, should the desired effect not be produced.



YELLOW WATER.

THE yellow water is very common in the western country among horses; and being infectious, is sometimes brought into this state by drove horses. It is extremely fatal in its consequences, unless some remedy is employed shortly after it makes its appearance. For the benefit of the public, I consider myself fortunate to be able to recommend such medicines for its cure as have been fairly tried, by a gentleman of Brunswick, and proved effectual.

Symptoms of Yellow Water.—The characteristics of this disease, are a dusky yellowness of the eyes, lips, and bars of the mouth; a dull, sluggish, appearance; a loss of appetite; the excrement hard, dry, yellow, and sometimes of a pale or light green; the urine uncommonly dark, of a dirty brown colour, and when discharged a length of time, has the appearance of blood.

Remedy.—Take of asafœtida, one ounce; camphorated spirits, four table spoonfuls; warm water one pint; mix and give them as a drench, for three or four mornings successively. Take of bran one and a half gallons, flour of sulphur one table spoonful, antimony twenty grains, saltpetre twenty grains; mix them well together, and, with a strong decoction of sassafras, scald the bran, forming a mash, which must be given three nights in a week, not permitting the horse to get wet, or drink water, except it is milk warm. His stable should be a comfortable one, and he should have a clean bed of straw placed under him. Bleed twice in the neck vein, taking half a gallon of blood at each bleeding, within the week; let his exercise be regular and moderate, and by the expiration of nine or ten days, the cure, in all probability, will be performed.



TO PREVENT INFECTIOUS DISEASES.

As most diseases that are infectious endanger the life of a horse, I consider it important to every owner of those useful animals, to be able to use a medicine that will act against or prevent those diseases that are

contagious. I have been in the habit of owning from one to eight horses at a time, for fifteen years, and in all that time never lost a horse. I cannot help believing my success, in this respect, has been much indebted to the constant use of the asafœtida, which I consider one of the most valuable and innocent medicines ever used amongst horses. It not only drives off diseases of almost every kind, but it keeps up the appetite, produces a remarkable fineness in the coat of hair, and gives such life and spirits as to induce even an old horse to attempt the attitudes and movements of the gay and mettled racer.

The value of the asafœtida is at present but little known for the use of horses; but whenever it shall have been used or brought into notice, its remarkable effects, no doubt, will prove what I now say. Its virtues are acknowledged and remembered with pleasure, by all those who have used it in their stables.

The asafœtida is produced from a plant called perennial, and is a native of Persia: it has, however, borne fertile seeds, in the open air, in the botanical garden of Edinburgh. The gum resin is produced from the roots of plants which are at least four years old. When the leaves begin to decay, the stalk is twisted off and the earth removed from about their large tapering roots. The top of the root is some time afterwards cut off transversely, and forty-eight hours afterwards the juice which has exuded, is scraped off, and a second transverse incision is made: this operation is repeated until the root is entirely exhausted of juice: after being scraped off, the juice is exposed to the sun to harden. It is brought to us in large irregular masses, composed of various little shining 'umps or grains, which are partly of a whitish colour, partly red-

dish, and partly of a violet hue; those masses accounted best which are clear, or a pale reddish colour, and variegated with a number of elegant white tears. This drug has a strong fetid smell, somewhat like that of the garlic, and a bitter acid, biting taste. The smell resides entirely in the essential oil, which arises in distillation. It is the most powerful of all the fetid gums, and is a most valuable medicine. It acts as a stimulant, anti-spasmodic, expectorant, emmenagogue, and anthelmintic, and its action is quick and penetrating.

When a small piece of the asafœtida has been placed in the manger of a horse in health, I have known him to stand for months in a stall next to one violently diseased without taking the infection, or any ill consequence resulting from their contiguous situation.

Preventive.—Take of asafœtida, one ounce, divide it and wrap each piece in a clean linen rag; nail one in the bottom of the manger the horse is fed in, the other in the bottom of the bucket in which he is watered. The above quantity will last about three months; at the expiration of which time it must be replenished.

A small piece confined to the bridle bit, will have the same effect when a horse goes from home, or enters on a journey.



GRAVEL IN THE HOOFS.

THE gravel in the hoof is an incident that happens to horses in travelling, and is brought on by small stones or grit getting between the hoof and shoe, settling to the quick, and then inflame and fester; it pro-

duces lameness and causes a horse to undergo very excruciating pain. The first step necessary for a horse's relief is, to have his shoes taken off and get the stone out. You may readily ascertain where they lie, by pressing the edge of the hoof with a pair of pincers. After all the gravel is removed, which may be known by a discontinuation of the blackness of the place, the wound caused by cutting for the gravel may be easily healed by melting together equal parts of bees-wax, rosin, fresh butter or sweet oil, and pouring the mixture on the wound, warm as the animal can bear it, without giving pain. Then warm a little tar or pitch, and pour a small quantity over the wound and its neighbouring parts, to keep out the dust and defend the foot from any hard substance for a few days, by which time it will get well.



WOUNDS.

A WOUND is generally defined a separation of the parts in any member of the animal body by some instrument. In all fresh wounds made by cutting instruments, there is nothing more required than bringing the lips of the wound into contact, by sewing a bandage, provided the part will allow of it. For wounds of the hips, or other prominent parts, and across some of the large muscles, the stitches are apt to burst by the horse's lying down and getting up in the stall. In such cases the lips of the wound should not be brought close together—one stitch is enough

for a wound two inches long, but in large wounds they should be an inch or more apart.

Should the wound bleed much from an artery's being divided, it will be necessary to secure it by passing a crooked needle underneath, and tying it with a waxed thread; but if the artery cannot be got at in this way, apply a small quantity of flour and salt to the mouth of the bleeding vessel, which will very soon have the desired effect. Care should be taken to keep it there, by proper compress or bandage, until a scar, scab, or crust is formed, otherwise it will elude your expectations, and frequently alarm you with fresh bleedings. After the lips of the wound are brought together, by this needle or bandage, it needs only to be covered with rags, dipped in spirits of any kind, or spirits of turpentine, and a little lint placed lightly within the edges of the wound, taking great care to keep it entirely clean, with strong soap suds, and as free from motion as possible. Whenever a wound becomes much swelled or inflamed, or discovers marks of mortification, frequent bleedings and the application of a red oak poultice or mush, will have a wonderful effect. Should the wound be disposed to heal very rapidly, and turn out what is termed proud flesh, by washing it with a little blue-stone water, it will, in a very short time, shut in, and the wound entirely heal.

The cure of most wounds is effected by the simplest methods, and it is often of much more consequence to know how to dress a wound, than what to dress it with, and in this consists the chief art of this branch of surgery; for the most eminent in that profession have long discovered that a variety of ointments, saives, and grease, are unnecessary in the cures of most wounds and sores, and they have accordingly

discarded the greatest part formerly in repute for that purpose ; repeated observations having taught them, that after digestion, or after healthy matter is formed, nature is disposed to heal up the wound fast enough herself. Some respect should be paid to the diet of a horse, as bran, oats, and green food keep the bowels open, and are free from that heat which the use of corn and fodder will produce in the system. I will here offer a few more simples that have proved beneficial in the cure of wounds, sores, &c.

The first operation necessary in all sores, wounds, &c. about a horse is, to remove all dirt, matter or extraneous bodies, with strong soap suds, after which,

No. 1. Take of spirits, half a pint ; alum, one ounce ; honey, one gill ; mix them well together, and wash the wound night and morning.

No. 2. Take of copperas, two ounces ; clean water, one quart ; wash the wound or sore twice a day.

No. 3. Take of sugar of lead, a quarter of an ounce ; fair water, one quart ; use it twice a day.

No. 4. Take spirits of turpentine and wet the wound once a day.

No. 5. Take of blue-stone, a quarter of an ounce ; fair water, one quart ; wash the wound every morning.

Punctured wounds, from thorns or other accidents, are generally of the most painful kind, and require great attention ; a bread and milk poultice, or a mush made by boiling red oak bark to a strong decoction, beating the bark very fine and throwing in as much corn meal as will make it of proper consistency should be applied until healthy matter appears, together with fomentations : after which, to effect a speedy cure, use any of the above remedies recommended.

Wounds in the feet, from shoeing, nails, thorns, or other accidents, are generally attended with much trouble, and are often productive of very fatal consequences when neglected. Such wounds should have old dirt, grit, &c. carefully removed with warm greasy water; after which, take of bees-wax, tar, and sweet oil, equal parts; stew them well together, and fill the wound, hot as the horse can bear it without experiencing pain; then pour on a little warm pitch, to prevent grit and dirt getting to the wound, and to protect the foot, while sore and tender, from the hard ground.



BRUISES.

BRUISES proceed from external injury, and when no remedy is employed, are sometimes attended with violent inflammation, and after bursting and discharging large quantities of matter, of a dark red colour and extremely offensive smell, often terminate in a mortification, which soon puts a period to the life of the animal.

Take of vinegar, one quart; laudanum, half an ounce; sugar of lead, quarter of an ounce; mix them well together, and apply it to the bruise three or four times a day; if the part bruised will admit of it, apply a flannel doubled and wet with the mixture, which will be the means of keeping the bruise continually moist. If by this method the swelling does not subside, apply

a poultice made of a strong decoction of red oak bark and meal, once a day, until the swelling abates ; but in bruises that cannot, by these means, be dispersed, and by pressing with the finger you discover that matter is formed, then the shortest way is, to open the skin and allow the bruise to discharge its contents : after which it will heal in a very short time, by keeping it entirely clean with soap suds alone. But after discharging the matter, if the wound should appear rotten and of dark colour, indicating mortification, together with any very considerable inflammation, bleed plentifully ; feed on bran, oats, long green food, or light food of any kind, and again apply the red oak poultice, which will very soon cure the inflammation, cleanse and alter the appearance of the wound. After which, any of the simples recommended for wounds, may be employed in speedily healing.



STRAINS.

STRAINS, in whatever part of the horse, either produced from running, slips, blows, or hard riding, are the relaxing, over-stretching or breaking the muscles or tendinous fibres. A strain, unless uncommonly bad, may be cured in a short time, by applying the following remedies :

Number 1. Take of sharp vinegar, one pint ; spirit, of any kind, half a pint ; camphor, one ounce : mix them well together and bathe the part injured twice a

day; a piece of flannel wet with the mixture and wrapped around the part, will be very beneficial; take from the neck vein half a gallon of blood.

No. 2. Take of opodeldoc (which can be procured from any apothecary's shop) a piece the size of a marble, and rub it on the strained part with the naked hand until the hand becomes dry, twice a day: should the injured part resist both these remedies, you may conclude the injury is a very serious one, which nothing but time can relieve, and the horse must be turned out upon grass a sufficient length of time for nature herself to perform the great operation.



STAGGERS.

THE staggers is a very common as well as a very fatal disease among horses of all ages: though young horses are more subject to it than those advanced in years.

Many various opinions have been offered to the public, and some with much confidence, relative to the origin and seat of this disease. But few, if any, as vet. have investigated the subject with correctness.

The staggers, in my opinion, are produced by permitting a horse to feed on grass in the spring and fall, late at night and early in the morning; for early in the morning and late in the evening, the fields and pastures are covered with a poisonous web, which is spun and spread upon the grass by a small spider. So rapidly, so industriously does this little insect work,

that in the space of one night, not a blade or spire of grass, has been left untouched. This web, catching the dew-drops on its bosom, causes the fields in the morning to glisten and sparkle as if covered with a thin sheet of ice. A horse that feeds upon a pasture in this situation must, of course, collect large quantities of this web and dew, and very often the spider itself. They act upon the horse, producing delirium, giddiness, apoplexy, and sometimes death. The lungs appear to be the principal seat of this disease; for in cases of dissection they have been found much enlarged, and covered with large brown spots; smell very offensively, and have some appearance of mortification.

The large quantity of poison taken into the stomach acts upon its nerves, and the sympathy that exists between that organ and the large nerves of the head, accounts for the dull, giddy, and dejected countenance of the animal, and has induced many to believe the staggers was confined to that part alone. The poison is then removed from the stomach by the activity of the lymphatic and absorbent vessels, thrown into the circulation of the blood, diffused over every part of the system, and finally carried by the arteries into the lungs, through which all the blood in the body of a horse passes many times in an hour, and undergoes a change. Sometimes a determination of blood to the head takes place, which generally ends fatally, producing a furious delirium, the horse throwing himself about with great violence, making it dangerous for any person to venture near him.

Symptoms.—The symptoms of the staggers are a drowsiness, eyes inflamed, half shut, and full of tears, the appetite bad, the disposition to sleep gradually increased, feebleness, a continual hanging of the head

or resting it on the manger, rearing, falling, and lying in a state of insensibility, walking a small circle for a considerable length of time, the ears hot, with a burning fever, &c. &c. &c.

Remedy.—Take from the neck vein half a gallon of blood, three times in a week ; take of sassafras tea, three half pints ; plantain juice, half a pint ; asafœtida, half an ounce ; saltpetre, one tea spoonful ; mix and give them as a drench three mornings in a week ; give an injection composed of one pint of meal, two quarts of water, one quart of molasses and one spoonful of hog's lard ; let the horse be moderately exercised, and whenever he is standing should be well rubbed ; give a mash twice a week, composed of one gallon of bran, one table spoonful of sulphur, one tea spoonful of saltpetre, one quart of boiling sassafras tea, and a eighth of an ounce of asafœtida, not permitting the horse to drink cold water for six hours afterwards. Should he be much mended by this treatment, nothing more will be necessary, except feeding him on bran, or light food of any kind ; but should he appear to receive no benefit from these attentions, in four or five days, take of calomel, twenty-five grains ; of opium, two drachms ; camphor, two drachms ; powdered fennel-seed, one drachm ; of syrup, of any kind, a sufficient quantity to make the ingredients into a ball, which may be given every morning for four or five days, by which time the horse will get well if his disease will admit of a cure.

Horses that are confined in a stable never have the staggers ; consequently it would be advisable for every person, whose situation will admit of it, to confine their horses, particularly at night, during the spring and fall months

MANGE.

THE mange in horses is a disease of the skin, which is generally rough, thick, and full of wrinkles, especially about the mane, tail, and thighs, and the little hair that remains on these parts stands up very much like bristles.

The ears and eye-brows are sometimes attacked, and in a short time are left quite naked. The mange is an infectious disease: indeed so much so, that if a horse is carried into a stable where one that is mangy has been in the habit of standing, he will be almost certain to take the infection, unless the litter has been removed and the stable properly cleansed and aired. Proper attention will make the cure easy.

Remedy.—Take of powdered brimstone and hog's lard an equal quantity, mix them well together and anoint the part affected twice a day, bleed plentifully and give two or three mashes (composed of bran, sulphur, saltpetre, and sassafras) within a week, by which time a cure will be performed.

A clean stable and nice bed of straw will aid much in accomplishing the object in view.



HIDE BOUND.

A HORSE is said to be hide bound when his skin will not slip under the pressure of the hand, but sticks as fast to the ribs as if it was glued.

Horses are sometimes hide bound in consequence of feeling the effects of some violent disease, and it is often a bad symptom; but generally, this tightness of the skin proceeds from poverty, cruel usage, and sometimes from worms.

The first thing necessary for performing a cure is, to offer better treatment to the animal, giving him plenty of light food, such as bran, oats, &c. and a clean stable with fresh litter. Then take from the neck vein half a gallon of blood; at night give a mash composed of one gallon of bran, scalded with sassafras tea; one table spoonful flour of sulphur or powdered brimstone, and one tea spoonful of saltpetre; not permitting him to drink for six hours afterwards.

On the second day, at twelve o'clock, take of copperas, two table spoonfuls; of warm sassafras tea, one quart; saltpetre, one tea spoonful, mix and give them as a drench. Have the horse well rubbed, and in a few days he will be entirely relieved.



SURFEIT.

THE surfeit is a common disease among horses that have been cruelly or injudiciously treated. Sudden changes from heat to cold, plunging deep into cold water and drinking plentifully after being excessively hard rode, unsound food, being turned from a warm and comfortable stable out into the cold air, night dews, &c. &c. often produce surfeit.

Symptoms.—The surfeit first makes its appearance with many fine and small lumps under the skin, a partial falling off of the hair, and a constant itching: at length a great number of scabs are formed, and some small ulcers, and unless some remedy is employed, the whole coat of hair falls off and the horse becomes covered with scabs: the hair in the mane and tail will be nearly rubbed off, and the little remaining will stand erect.

Remedy.—Take from the neck vein on the first and fourth days of the week, half a gallon of blood; give a mash of one gallon of bran, one table spoonful of sulphur, one tea spoonful of saltpetre, and a quart of hot sassafras tea, well mixed together, three times within a week, not permitting him to drink for six hours whenever a mash is taken.

Give three drenches within the week, composed of one quart of sassafras tea, and one tea spoonful of saltpetre, each. Change the horse's litter frequently; keep his stable clean, and do not permit him to get wet.

Take of hog's lard and sulphur, equal parts, mix them and anoint the horse where the surfeit appears worse, once a day; and by the expiration of a week, if the horse is not entirely well, he will be much benefited, and nothing more will be necessary, except giving him food that is light and easily digested, and observe towards him kind treatment.

SORE TONGUE.

TAKE four ounces sugar of lead, four do. bole ammoniac, eight do. alum, burned.

The whole to be put in three quarts of good vinegar, and the horse's mouth washed or swabbed two or three times a day, keeping the bit out of the mouth. The above is enough for six horses.



[FROM THE AMERICAN FARMER.]

BIG HEAD.

I HAVE noticed several essays in your valuable paper, the "American Farmer," on the subject of "*big head in horses*," and as I have never seen any description of this disease, or any cure recommended, I will endeavour to communicate what my limited experience on that subject has taught me :

About twelve years ago the disease made its appearance in this neighbourhood, and before a remedy was found out, many losses were sustained, by the death of the horses which were diseased. One of my neighbours lost horses to the value of six or seven thousand dollars, among them some of the best blooded mares and colts. I lost one only, and the first and only one, a brood mare, which had it about that time. Various applications were made to cure it, such as driving in spirits of turpentine by rubbing the parts affected, and holding a red hot iron near the place :

burning, bruising, and cutting, were also resorted to, but in every case that I saw or heard of, the disease terminated in the death of the animal. At length white arsenic was recommended, but by whom it was first discovered, I am ignorant. I had occasion, about four years ago, to try it on a fine Archy mare, then in foal by Archy: she was affected on both sides of the face, and I succeeded in curing her: she produced a horse colt, whilst she was under the operation of the arsenic. At about two years old the colt was affected on one side of the face. I had recourse to the arsenic and completely eradicated the disorder, leaving only a slight scar, though the mucus membrane of the nostril was so much injured as to cause a difficulty of breathing through it. The mare was still more affected, as both nostrils were nearly closed, and her head continued to be much larger than before she was taken with the disease, though generally in good order, and occasionally worked. She has, however, produced three fine colts since, none of which has as yet been affected with the big head. I designed to have trained her first colt, but in consequence of the affection of his nostril, I declined the idea. He is now four years old, enjoying fine health, and possessing great vigour as a stallion. I am thus particular in detailing the character of the animals who have been cured, that it may be seen how little horses are affected by the disease after it has been cured. I have known the arsenic exhibited in at least twenty cases, in all of which it effected a cure, and I think I can say, that it is an infallible remedy. I will now endeavour to describe the disease, and the recipe.

Symptoms—Loss of appetite, a drooping of the head and a disinclination to move about—a slight

weeping from the eye on the side affected—in a short time a local swelling appears on the side of the face in a direct line between the eye and nostril, which on being pressed hard with the finger causes the animal to wince, and by rubbing it gently with the hand, appears to give ease to him—an enlargement of the jaw bone, and a considerable decline in flesh. I have not discovered that the disease is attended with fever; if it is suffered to run long, it causes an affection of the joints—they become puffed, as if inflated with wind, and in a short time those swellings become filled with pus, and ultimately break, and a discharge of purulent matter issues from the joints, and the animal falls, to rise no more without help. It is supposed to be infectious only in this last state of the disease.

Cure.—As soon as the swelling on the side of the face appears, take a piece of white arsenic about the size of a common field pea, (or about six or eight grains pulverized and wrapped in fine paper, of a size only sufficient to contain it,) make an incision in the skin, immediately over the hard tumour, insert the arsenic (or the paper containing it,) and with a needle and thread make one suture or stitch, tie the ends of the thread in a hard knot, bleed the horse, and turn him out alone in a good pasture, or if it is cold weather, put him in a stable, removed from other horses, and feed him on light food—in a few days the effects of the arsenic will be discoverable by a considerable swelling of the head, nose, and face, which will increase until the power of the arsenic is exhausted—if both sides of the face are operated on at the same time, the head will swell to an enormous size—in about a month, or six weeks, the arsenic will have developed its efficacy by the appearance of a circular piece of

skin, and the porous bone of the face which extends as far as the seat of the disease, or the influence of the arsenic on the affected part; this circular development extends as far as the affected part only, and is quite callous and nearly detached from the sound skin, leaving the wholesome flesh in its natural state. In a month or six weeks longer, this circular part becomes entirely detached on its periphery from the sound skin, and adheres to the side of the face by a few slight integuments about its centre, which soon decays, (or it may be cut off,) and the diseased parts drop out in a mass, leaving a hideous wound; then may be seen the porous bone of the face, resembling honey-comb, which soon becomes covered with sound flesh and skin: the wound may be soon healed by using common applications, though I have made use of what we farmers in the country call pot liquor, as a wash, and anointing the place with an ointment made by bruising the leaves of the common poke-weed, (*phytolacca decandra*) and extracting the juice by pressure, and stewing it in hog's lard, or of the Jamestown weed, or thorn apple, (*datura stramonium*,) prepared in the same way. These applications may be made use of with advantage as soon as it is discovered that the parts begin to separate. If the weather be warm it may be necessary to anoint the parts with a mixture of common tar and hog's lard, or the juice of elder stewed in hog's lard, in order to keep away the blow fly, which will be attracted to the parts by the offensiveness of the scent emitted. It cannot be expected that a horse which has thus been operated upon, will regain the beauty of his head, particularly if he be an old horse, or has been affected on both sides of the face, or the disease has been suffered to run too long

before applying the remedy : this is evidenced by the appearance of my mare. I suffered the disease to run too long, because I was fearful that the arsenic might injure the foal, but was induced to risk it rather than lose the mare : the stallion on the contrary, exhibits the effects of it in but a slight degree. It may be proper to remark, that a less quantity of arsenic will answer for a colt than for an old horse ; and that it ought to be inserted as high up on the face as the seat of the disease will admit of ; perhaps on the upper edge of the swelled part will answer the same end.

Another remedy has been communicated to me, which is much more simple ; and if it be a remedy, certainly possesses great advantages over the one on which I have been treating. I have never known it tried, but I am induced to believe that it is a remedy, both from its analogy to the arsenic, and from the authority from which I derived my information. It is this : Instead of the arsenic, take half a pint of strong ashes, (hickory I suppose,) put them into a tin cup, (of about a pint measure,) smaller at the mouth than at the bottom, say about one and a half inches at the mouth in diameter ; fill the cup or pot with water, and let it boil for half an hour, or until the water has been evaporated, or absorbed by the ashes, cord the horse's nose in the usual way, or otherwise confine him, in order that he may be still, and apply the mouth of the cup to the part affected, with the ashes quite hot and nearly dry, having previously covered it with a thin cloth to prevent the ashes from coming in contact with the skin of the horse, and hold it in that position until the heat has subsided, when it may be removed : in a day or two the parts will exhibit a gluey exudation, which will disappear in the course of a week, leaving

an inconsiderable sore like a burn, which may be soon cured by treating it as such. It may be necessary in some cases to make the second application. The horse may be used as usual at the time, and when the wound heals up, scarcely any scar will remain.

Or, Take blood from the neck vein and bathe the swelled parts with spirits of turpentine once or twice a week, rubbing it in with a hard brush until you discover the swelling is stopped: the lumps always remain, but as they cease to grow the horse gets better.

Or, Give stramonium (Jamestown or Jameson weed) in doses of one drachm, mixed with his feed for several days, then turning him out for two or three months.



FISTULA.

THE fistula in the withers, generally proceeds from some blow or bruise, and is the most disagreeable disease to which a horse is subject. I would recommend it to every person, whose situation will admit of the sacrifice, to dispose of a horse thus unfortunately affected, for whatever sum he would bring, or even give him away, sooner than be at the expense and trouble, and run the risk of performing a cure which, if completed, would be tedious, and the horse be much lessened in value in consequence of being disfigured by the scar which unavoidably will be left. The remedy here recommended is severe, but it will have the desired effect more speedily than any other.

So soon as the fistula assumes a formidable appearance, fomentations of bitter herbs should be employed, such as wormwood, camomile, bay leaves, mullen, life-everlasting, &c. boiled in water to a strong decoction, and after being strained, should be applied hot as the horse can bear it without giving pain, by means of large woollen cloths. This application promotes suppuration, and when matter is formed let the tumour be opened, so that its contents may be completely evacuated; after which let the sore be nicely washed with strong soap suds, and apply the following ointment once a day:—Take of verdigris, half an ounce; copperas, half an ounce; oil turpentine, one ounce; ointment of yellow rosin, four ounces; to be well mixed together. As soon as healthy matter is discharged from the fistula the ointment may be discontinued, and nothing more will be necessary, except keeping it perfectly clean with strong soap suds.

When the fistula first makes its appearance, it may be removed or prevented by placing a rowel or seton in each shoulder, just below the swelled or inflamed part which should be kept running two or three weeks.



POLL-EVIL.

THE poll-evil, like the fistula, proceeds from some blow, bruise, or external injury, and its consequences are much to be dreaded. A horse thus diseased would be well sold almost at any price, though the cure is tolerably certain, yet extremely slow. The poll-evil

is an abscess or swelling found in the sinews, between the noll bone and the uppermost vertebra of the neck, immediately on the poll or nap of the neck. When this swelling first makes its appearance, bathe it frequently with hot vinegar; and if the hair be fretted off, with an oozing through the skin, make use of equal parts of vinegar and spirits of wine; but if there be an itching, with heat and inflammation, the safest way will be to bleed plentifully, and apply a red oak poultice, which will sometimes disperse the swelling and put an end to the disease. But whenever the tumour is critical, having all the signs of matter, and appears not benefited by the applications already recommended, it will be advisable to bring it to a head as speedily as possible, with the following poultice: Corn meal, marsh mallows, oil turpentine, and hog's lard. When the tumour becomes ripe or full of matter, it may be either opened or permitted to break of itself; if opened with a knife, great care should be used to prevent wounding the tendinous ligament that runs along the neck under the mane. When the matter appears to be on both sides, the tumours must be opened on both sides, and the ligament between remain undivided; if the matter flows in great quantities, resembling melted glue, and is of an oily consistence, it will require a second incision, especially if any cavities are discovered by the fingers or probe; these should be opened by the knife, and the wound should be dressed with spirits of turpentine, honey, and tincture of myrrh, until light and thick coloured matter is found. Cleanse the sore well with strong soap suds and a sponge; then take of verdigris, half an ounce; oil of turpentine, four ounces; of blue-stone, two ounces; of green copperas, half an ounce; mix them well together, and hold them over a fire until they are as not

as the horse can bear them : then pour them into the abscess and close the lips by one or two stitches ; this is to remain for several days without any other dressing, except bathing with spirits of wine. Should matter flow in great abundance, and of thin consistency, the above application must be again repeated until the matter decreases in quantity, and becomes of a whitish colour and healthy appearance.



LOCK-JAW.

THE lock-jaw is so fatal in its consequences, that it is a fortunate circumstance it occurs so seldom amongst horses.

It commences with a difficulty in mastication, and shortly after the jaws are so completely and immovably closed, that it is with much difficulty that medicines can be administered. The muscles of the neck appear much contracted, and the animal appears to suffer great pain.

The lock-jaw is frequently brought on by trifling causes, such as cuts, wounding of nerves, tendons, &c. Generally speaking, the cure is very uncertain ; but it will chiefly depend on opium, the warm bath, and other antispasmodics. Sometimes the sudden application of cold water, in great quantities, has been serviceable ; friction of turpentine oil or spirits, generally proves useful, as does a clyster made with two

ounces of spirits of hartshorn, four ounces of oil of turpentine, and the yolks of three or four eggs, mixed with a quart of strong ale and gin or whiskey. It is a great object to promote urine, sweat, &c. Opium, camphor, and copious bleedings, have been found, in some cases, very beneficial; and when they have failed, hartshorn, ether, opium, and brandy, have been employed with some success; though the lock-jaw is often a symptom of approaching dissolution, and frequently defies the power of any kind of medicine that can be employed.



LOST APPETITE.

HORSES lose their appetites from various causes, viz:—Excessive fatigue, want of a change in food, dirty fodder, mouldy corn, or a dirty manger, &c. &c. but most frequently by the approach of some disease. So soon as you discover a horse has lost his appetite, observe the following treatment, viz:—

Take from the neck vein half a gallon of blood; take of asafœtida, a quarter of an ounce; salt, one table spoonful; sassafras tea, one quart; mix and give them as a drench.

On the second day, take of glauber salts, one pound; warm water, one quart; after dissolving the salts give it as a drench, and in two or three days the appetite will be restored, unless the animal is labouring under some disease, which may be ascertained by the symptoms.

COLDS.

Nothing is more common than colds among horses of all ages. They are frequently produced by a want of good rubbing after violent exercise, which strikes a chilliness and dampness over the whole body; being changed from a warm and comfortable stable to one cold and open; standing out late in dew at night plunging deep in cold water while heated in a profuse perspiration; all of which have a tendency to check the perspirable matter and contract the pores of the skin.

Colds sometimes produce a slight running at the nose: the remedy is simple and almost certain—bleed plentifully.



SADDLE GALLS.

SADDLE GALLS are generally occasioned by an unequal pressure of the saddle, or by a saddle being badly fitted to a horse's back, and if neglected they grow into very ugly and troublesome sores. When these inflamed tumours are first discovered, cold water alone is frequently sufficient to disperse and drive them away, if applied as soon as the saddle is pulled off but when that will not have the desired effect, by washing them twice a day in the mixture I shall here recommend, the cure will be readily performed.—Take of sharp vinegar, one gill; spirits, of any kind, one gill; sweet oil or fresh butter, one table spoonful; to be well mixed before used.

SITFASTS.

SITFASTS proceed from the part being frequently bruised with a saddle, until it becomes extremely hard, and after remaining some length of time it is not unlike a horny substance. The cure cannot be performed unless the knife is used for the purpose of cutting it entirely out. After which the fresh wound can be healed with the greatest ease, in a very short time, by using either of the following mixtures:

No. 1. Take of brandy, half a pint; honey, half a pint; alum, two ounces.

No. 2. Take of blue-stone, a quarter of an ounce; spirits of turpentine, two table spoonfuls; spring water, one pint.

No. 3. Take sugar of lead half an ounce; alum, one ounce; copperas, half an ounce; let them be well mixed, and the sitfast washed twice a day, after the wound is washed clean with soap and water.



DIARRHŒA OR PURGING.

A DIARRHŒA amongst horses seldom occurs and is easy of cure. It may be produced by a suppression of perspiration or by an increased secretion of bile.

The following ball (No. 1.) generally gives relief. but should it not have the desired effect, No. 2 may be employed.

No 1. Take of suc. aloes, six drachms; Castile soap, four drachms; and syrup enough to form the ball

No 2. Take of opium, one drachm, antimony, three drachms; powdered ginger, two drachms; and syrup enough, of any kind, to form a ball.

It will benefit a horse very much by keeping him warmly clothed while labouring under this disease.



DIABETES.

A **DIABETES** is a profuse staling or a constant discharge of water; it is attended with great weakness, loss of flesh and appetite, with every appearance of decay and approaching dissolution.

It is frequently the result of old disorders, surfeits, excessive hard rides, &c. &c. A horse of a delicate and weak constitution is extremely difficult to cure, as he soon loses flesh and appetite, his hair becomes rough, his eyes weak, sad, and dejected, and in a very short time he is unfit for any kind of labour. But if the following remedies are employed, when the disease first makes its appearance, if the horse possesses a tolerable good constitution, the cure, by proper attention, can be rendered almost certain.

Remedy.—No. 1. Take of opium, one drachm; **asafoetida**, two drachms; powdered ginger, two ditto; red oak bark, powdered, one ounce; syrup of any kind, a sufficient quantity to make two balls for one dose, which must be repeated three times within a week, and the horse must not be permitted to drink an unusual quantity of water. A little salt thrown into that he is permitted to use, will be found very beneficial.

No. 2. Take of red wine, one pint; water, one pint; gum Arabic, one ounce; mix and give them as a drench three times within a week.

No. 3. Take of salts of hartshorn, three drachms; opium, one drachm; powdered ginger, two drachms; liquorice, half an ounce: syrup, of any kind, a sufficient quantity to make the ingredients into two balls, which may be given twice within a week. Nourishing food, moderate exercise, and a clean, wholesome stable will assist much in effecting a cure.



BLISTERS.

PREVIOUS to the application of a blister to any part of a horse, the hair should either be shaved or cut off as close as possible; the blistering ointment should be regularly spread with a warm knife on a stout piece of oznaburgs; and during the operation of the blister, the horse should be tied short to prevent his biting the part or doing other injury.

Blister—No. 1. Take of Spanish flies half an ounce, oil turpentine one ounce, hog's lard four ounces; mix them well and the blister is ready for use.

No. 2—Take of tar, four ounces; vitriolic acid two drachms, oil of origanum, half an ounce; hog's lard, two ounces; Spanish flies, two ounces. This blister is excellent for the spavin.

CLYSTER OR GLYSTER.

As clysters very often are the means of saving horses' lives, I shall here recommend the best and simplest mode of administering them. Take a large bladder, cut off the neck and soften it in warm water, take a pewter pipe, common reed, or any other smooth tube, nine or ten inches long and not more than an inch in diameter; the clyster must then be poured through a funnel into the bag, and securely tied around one end of the tube; the other must be made perfectly smooth and rounding, well oiled, and introduced into the anus several inches; the liquid in the bladder must be forced through the tube by pressure with the hand.—When a clyster is given, a horse should be placed with his head down hill, and if he refuses to stand, a twitch should be put upon his nose.

Glysters are of three kinds—opening, anodyne, and nourishing. For the first purpose take a gallon of warm water, with from half a pound to a pound of common salt dissolved in it; to which add four or five ounces of olive or linseed oil. For the second, take two drachms of solid opium, dissolve them, or rather mix them well with about half a pint of warm water, and add from a quart to three pints of Indian meal or wheat flour gruel. For the third purpose, rich broths, wheat flour gruel, and other nourishing fluids are recommended. With respect to the first kind of glysters, it may be observed that gruel is commonly preferred to warm water: but according to my experience, the latter does just as well as the former. As to the second, tincture of opium may be substitu-

ted for solid opium, and is by some preferred to it, but the quantity should not exceed two ounces, on account of the spirit in which this opium is dissolved. The third kind of glyster is required only in lock-jaw, or in diseases of the throat which prevent swallowing, and in these its utility seems to be very questionable. As soon as the glyster has been injected, the tail should be kept close to the fundament for a few minutes to prevent its being too hastily returned. This is particularly necessary when the anodyne clyster is employed. The pipe must be oiled or greased before it is introduced, and if its passage be obstructed by hard dung lodged in the gut, the hand should be gradually introduced in order to remove it.



FOMENTATIONS.

FOMENTATIONS are generally made of bitter herbs, such as wormwood, camomile, mullen, bay leaves, sutherwood, life-everlasting, &c. &c. boiled in water to a strong decoction, strained off, and applied with large woollen cloths, hot as the animal can bear it that it is intended to benefit. The efficacy of fomentations often depends on the length of time they are employed, and their being frequently repeated.

Poultice.—The following mixtures will be found useful as a poultice :

No 1. Take of bran, one quart; of sharp vinegar (scalding hot) half a pint; hog's lard, one table spoonful—mix them for use.

No. 2. Take of red oak bark a sufficiency to boil to one quart of strong decoction ; take of Indian meal, a sufficient quantity to form the poultice.

No. 3. Take of sharp vinegar, half a pint ; of meal one quart ; of hog's lard, two table spoonfuls ; pour a sufficient quantity of boiling water to form it into a mash, when it will be ready for use.



MASH.

A MASH is generally given to a horse for the purpose of cooling the system, opening the bowels, and for disguising different kinds of medicines which may be necessary to be administered ; which if given in any other way, would be attended with trouble and difficulty, and would not be productive of effects so salutary.

Mash.—No. 1. Take of bran one gallon, sassafras tea (scalding hot) one quart, powdered brimstone one table spoonful, saltpetre one tea spoonful.

No. 2. Take of oats one gallon, flour sulphur one table spoonful, saltpetre one tea spoonful, boiling water one quart.

No. 3. Take of bran one gallon, salts (glauber, four ounces, sulphur one table spoonful, sassafras tea (scalding hot) one quart—let them be well mixed and given milk warm, not permitting the horse to drink cold water for six hours afterwards.

BLEEDING.

THE bleeding of a horse is so common and simple, that but little instruction can be necessary for the performance of the operation. The blood should always be caught in some vessel for the purpose of judging of its quantity and quality; if after it has coagulated a light buff coloured jelly forms the surface, it is an evidence of the inflammatory state of the blood. Blood drawn from a healthy horse very soon coagulates and appears like a uniformly red jelly, with a small quantity of fluid, resembling water, floating on the surface. . . . consists of two parts—the red jelly (termed crassa mentum) and the water or serum; the former may be separated into two parts by washing the red globules and coagulable lymph.

Bleeding is extremely beneficial in many diseases, and with safety from one quart to one and a half gallons may be taken at one time.



TO SPOT A WHITE HORSE

WITH BLACK SPOTS.

TAKE litharage, three ounces; quick lime, six ounces; beat it fine and mix it together: put it into a pan and pour a sharp ley over it; then boil it and you will have a fat substance swim on top, with which anoint the horse in such places as you design to have black and it will turn to the colour immediately.

It has the same effect in changing hair that is red into a black colour, with only this difference, viz. :— Take an equal quantity of lime and litharage, and instead of boiling it with ley, boil it only with fresh water; what swims at top, is fit for use and will answer your expectation; what hairs you anoint with it in the evening, will be black the next morning.



DRIVING.

It may be generally remarked, that men who drive fast have swift horses; not that they drive fast because they have swift horses, but because fast driving makes horses swift. A horse may commonly be trained to a dull and heavy, or to an airy and fleet gait. Nature unquestionably does much; but education does far more towards producing the great difference in the speed of horses, than most men are willing to allow. Horses are more frequently injured by driving them beyond their *habitual* pace, than beyond their *native* power. The best direction for the education of horses is, “drive *fast* and stop *often*.”



A TRIBUTE TO THE HORSE.

JOHN WALL'S RECIPE.

TAKE half a pound of saltpetre, half a pound of alum, and half a pound of alum salt; pulverize and mix them well together, and every eight days give him a table spoonful in his food; his coat, flesh, and spirits will soon reward his master for his care.

MULES.



MULE AND HINNY,

HYBRIDS OF THE HORSE AND ASS.

THE mule is the hybrid produce of an ass with a mare ; having a large clumsy head, long erect ears, a short mane, and a thin tail.

The hinny is the hybrid produce between the she-ass and a stallion ; the head is long and thin, the ears are like those of a horse, the mane is short, and the tail is well filled with hair. The hinny is much less common than the mule, because, being less hardy and useful than the other, he is never cultivated.

The mule, commonly so called, is much valued for the saddle, and for drawing carriages in Spain, Portugal, Italy, and the East, and in the warmer parts of America. In those countries where great attention is paid to the breed, it is as tall as the horse, exceedingly well-limbed, but not so handsome, especially about the head and tail. These animals are mostly sterile ; some, indeed, have thought that they are altogether incapable of producing their kind ; but some few instances have occurred, in which female mules have had foals, and in which even the male has impregnated females both of the ass and horse species, though such instances are exceedingly rare.

The mules made use of in the southern parts of Europe, are now brought to an astonishing perfection as well as great size. They are usually black, strong

well-limbed, and large, being mostly bred out of fine Spanish mares. They are sometimes fifteen or sixteen hands high, and the best of them worth forty or fifty pounds. No creatures are so proper for large burdens, and none so sure footed. They are much stronger for draft than our horses, and are often as thick set as our dray horses, and will travel several months together, with six or eight hundred weight upon their backs. Some think it surprising that these animals are not more propagated here, as they are so much hardier and stronger than horses, less subject to diseases, and capable of living and working to twice the age of a horse. Those that are bred in cold countries are more hardy and fit for labour than those bred in hot; and those which are light made are fitter for riding than horses, as to the walk and trot; but they are apt to gallop rough; though these do it much less than the short-made ones. The general complaint made against them is, that they kick and are stubborn; but this is owing to neglect in breeding them, for they are as gentle as horses, in countries where they are bred with proper care.

In the breeding of mules, mares that are of a very large breed and well made, should be employed. They should be young, full of life, large barrell'd, but small'd limbed, with a moderate sized head, and a good forehead. It is found of advantage to have the foals from the time of their being dropped often handled, to make them gentle: it prevents their hurting themselves by skittishness and sudden frights; and they are much easier broken at the proper age, and become docile and harmless, having nothing of that viciousness which is so commonly complained of in these animals. They may be broken at three years

old, but should never be permitted to do much hard work till four, as they are thus secured from being hurt by hard labour, till they have acquired strength enough to bear it without injury. An expert breeder of these animals found, that feeding them too well while young, though it made them very fat, was far from being any advantage to them; as it was not only incurring a much larger expense than was any way necessary, but also made them wonderfully nice and delicate in their appetites ever after, and also by increasing their weight of flesh, rendered them more subject to strains and hurts in their morning gambols. He therefore contented himself with giving them food enough to prevent their losing flesh, and to keep up their growth without palling their appetites with delicacies, or making them over fat; he also took care to defend them from the injuries of the weather by allowing them stable room, and good litter to sleep on, besides causing them every day to be well rubbed down, with a hard wisp of straw, by an active groom. This was scarcely ever omitted, particularly in cold, raw, wet weather, when they were least inclined to exercise themselves. When three years old, mules are proper for use.

The shoe for the mule is for the fore foot very similar to that which farriers call the bar shoe. It is very wide and large, especially at the toe, where it sometimes projects four inches and upwards beyond the hoof. This excess is given it with a view to enlarge the basis of the foot, which is in general exceedingly narrow in this animal. The shoe for the hind feet is open at the heels like a horse's shoe; but is lengthened at the toe like the preceding one. Mules are, however, by no means invariably shod in this manner: "

is not unusual to shoe them either like horses or asses, as they approach the one or the other in size or work required.



[FROM THE AMERICAN FARMER.]

PRIZE ESSAY.

[The premium of a silver cup, of thirty dollars value, offered by Robert Oliver, Esq. to the author of the best essay on the natural history of the Mule, and its value for the general purposes of agriculture, in comparison with horses, was awarded by a committee, appointed by the Trustees of the Maryland Agricultural Society, to the author of the following essay.]

A DISSERTATION ON THE MULE,

With the view of promoting an improvement in the breed, and of demonstrating the utility of employing him as a substitute for the horse, in the labours of husbandry, canals, &c.

BY SAMUEL WYLLYS POMEROY.

“——— Opinion is the queen of the world—it gives motion to the springs, and direction to the wheels of power.”

John Quincy Adams.

“Knowledge is power.”—*Bacon.*

Soon after the accession of Charles III. to the crown of Spain, his subjects were prohibited by a severe edict, from wearing *flapped hats* and *long cloaks*; which caused an *insurrection* that obliged him to flee from Madrid, after witnessing the massacre of nearly one hundred of his Walloon guards; and might have terminated in a revolution, but for a speedy revocation of the edict and banishment of his ministers. An eminent writer introduces the history of the occurrence, by observing, that “it is easier to conquer half

the world than to subdue a single prejudice or error, most nations having a superstitious attachment to those habitudes which they derive from their ancestors, that seem to come along with them into the world, and with which they were nursed and brought up."

Perhaps it may be deemed by many quite as visionary or absurd to attempt an introduction of the mule as a substitute for the horse, for the purposes of agriculture and hackney employments, as was the project of the Spanish monarch for compelling his subjects to wear the *French costume*, to the exclusion of one they had been so long accustomed to look upon "as a *distinction* which was the birth-right of every true Spaniard;" and as we may suppose, so congenial to the indolent habits for which that nation had long been proverbial.

It must be acknowledged that there are serious, though I trust in this age of improvement, not insurmountable impediments; for we have to combat not only hereditary prejudices, or to speak more correctly such as have proceeded from a deficiency of means and want of knowledge, to develop the valuable properties and to subdue propensities of a contrary character in this hybrid race, but we are met at the threshold by the same species of pride which the Spaniards manifested in regard to their costume, founded on the enthusiastic, I may almost say superstitious, attachment to the horse.

It is believed that a vast portion of our fellow citizens, and I may with propriety add the people of Great Britain, from whom we have derived some inveterate prejudices as well as those illustrious examples that have had such a powerful influence in leading our country to the high destinies that await her, do not

consider that a *mule*, especially a well bred one, would be in himself and in their view, one of the best formed and most distinguished of animals, if they had never seen a horse; they must admit, however, that he holds the second rank instead of the first, and it is principally from this circumstance that so little attention has been paid to him in both countries. Comparison is the chief cause of his degradation—they look at and give their opinions not of himself, but comparatively with the horse. They seem not aware that he is a *mule*—that he has all the qualities of his nature, all the gifts attached to the connecting and final link of two distinct species, and think only of the figure and *qualities* of the horse which are wanting in him, and that he ought not to have; for he possesses those of more intrinsic value, which the supreme Author of nature has denied to both of his parents.

There are few subjects of animated nature that have engaged the attention of the most eminent naturalists, more than the genus *Equus*, to which the horse and ass, with their *hybrid* offspring, are assigned. *Linnaeus*, with a view to establish, by new arguments, his doctrine, or theory of the *sexual system* of plants, which *Spallanzani* had attempted to overturn, illustrated their generation by pursuing the chain of nature from the animal to the vegetable kingdom; and has taken prominent examples from the two different productions of mules. He says, “from the mare and male ass proceeds the mule, properly so called, which in its nature, that is, in its medullary substance, nervous system, and what *Malpighi* calls the keel, (*carina*.) *bottom* in sportsmen’s language, is latent in, and derived from the mare. But in its cortical substance and outward form, in its mane and tail, resembles

the ass. Between the female ass and the horse, the other kind of mule is engendered, whose nature or medullary substance, resembles that of the ass: but its outward form and cortical structure, or vascular system that of the horse.”*

The latter kind was called *Hinnus* by the ancients, hence the modern name *Hinny*. They were not held in much estimation by the Romans, according to Pliny, who describes them as difficult to manage, and so slow that little service could be derived from them. *Buffon* has noticed this animal, which he says “is smaller than the mule, as it preserves the diminutive stature of the ass.” Hinnys were seldom propagated; but it is said that a number have lately been bred in Spain, probably in consequence of the destruction of mares in the peninsular war, and are represented of good size, and more beautiful than the mule: that is, they resemble the horse much more. I understand a few have been bred upon the Spanish Main, no doubt from a similar cause that led to the system in Spain; and if my information is correct, some have been recently shipped to the West India Islands, but are by no means esteemed so hardy, or valuable for service, as mules.

Notwithstanding mules have a disposition to propagate, there have been but two or three well authenticated instances recorded of their having bred; and those productions were considered monsters. *Buffon* was indefatigable in his researches on the subject: and although he admits that it is possible for both males

* See “A Dissertation on the Sexes of Plants,” by Sir Charles Linnæus—read before the Imperial Academy of Sciences at St. Petersburg, Sept. 6, 1760, and which obtained the premium of one hundred ducats.

and females to propagate, he is confident that their parents are of a species distinct from each other. He says "the ass is not a horse degenerated," as some had supposed, "he is neither a stranger, an intruder, nor a bastard; he has, like other animals, his family, his species, and his rank; his blood is pure and untainted, and although his race is less noble, yet it is equally good, equally ancient as that of the horse." This profound naturalist continues a very minute and eloquent comparison between the horse and ass; some of his expressions I have taken the liberty to apply to the *mule* and the horse in a preceding paragraph.

It may promote the object in view to enter extensively upon the history of the ass; and we commence with the supposition, that when men became so far civilized as to have burdens to carry, or required to be carried themselves, this animal was the first domesticated for that purpose—and it is reasonable to infer that those of the least spirit and most tractable, were put in requisition in the first instance; when by breeding *in and in*, without any care in the selection of sire or dam, became in process of time degenerated to a very inferior grade. Be this as it may, it is an unquestionable fact that different races of the ass now exist, possessing properties as distinct as are found in the species of *camel*. For instance, the *Bactrian* or single hunched camel, called the *dromedary*, by far the most numerous race, being lightly formed, exhibits great activity, and is able to traverse vast tracts with the speed of a high mettled race horse. The Arabian camel, with two protuberances on his back, is considerably larger, of much stronger form, travels at a pace seldom exceeding three miles an hour, and is capable of conveying such burdens, that the Arabs

style him, emphatically, the *ship of the desert*; yet they are of the same species—a cross between them breed and constitute another variety, which multiply and according to Buffon, have the most vigour, and are preferred to all others.

Ancient writers recognise three or four distinct varieties of the ass. According to the learned Dr Harris, four different races are indicated in the original Hebrew scriptures, viz: *Para*, *Chamor*, *Aton*, and *Orud*.*

The wild ass (*Para*.) was a native of Arabia, Deserta, and those countries which formed the great Babylonian empire. They are now found in Southern Tartary, in the mountainous districts and saline plains of Persia—are migratory in large herds, visiting in winter the Northern parts of India, and said to be so fleet that no horse can overtake them in the chase.—This race is frequently alluded to by the inspired poets and prophets; and afford *similies* diametrically opposite to those drawn from the domestic race. The sublime description of the former in the book of Job, exhibits such a contrast, that I trust its insertion in this place will not be deemed improper.

“Who from the forest ass his collar broke,
And manumized his shoulders from the yoke?
Wild tenant of the waste, I sent him there
Among the shrubs, to breathe in freedom’s air.

* See the “Natural History of the Bible, by Thaddeus Mason Harris, D. D. 1 vol. 8vo. Wells & Lilly, Boston.” A work would earnestly recommend to those readers of the sacred volume who are desirous to be better acquainted with many allusions to subjects of natural history, founded on their nature, habits, and characteristic qualities, developing beautiful similies, which would otherwise lie concealed—and enabling them to judge more correctly of the propriety of such allusions.

Swift as an arrow in his speed he flies;
 Sees from afar the smoky city rise;
 Scorns the throng'd street, where slavery drags her load,
 The loud voic'd driver and his urging goad:
 Where e'er the mountain waves its lofty wood,
 A boundless range, he seeks his verdant food."

Scott's Version.

We find, that at a very early period of sacred history, the common domestic ass (*Chamor*), was employed in all the menial labours of a patriarchal family, while a nobler and more estimable animal (*Aton*), was destined to carry the patriarchs, the well born; and those on whom marks of distinction were to be conferred. They constituted an important item in a schedule of the pastoral wealth of those times; of course attracted particular attention and care. *David* we are told, had an officer, apparently of high dignity, appointed expressly to superintend his stud of high bred asses, or *Atonoth*.

There was another race that has been mentioned by Aristotle, and by Theophrastus, whom Pliny quotes, which they denominated the wild mules that bred (*hemi-onos*), and were found in Cappadocia and Africa. There can be but little doubt but this is the *Hemionus* or wild mule of the Mongolian Tartars, so particularly described by professor Pallas; and that it is not a hybrid, but actually of the species of ass resembling a mule.* This race is identified by Dr. Harris with the *Orud* of scripture.

The wild ass of Northern and Western Africa, whose flesh was so much admired by the Roman epi-

* Herodotus says, that in the army of Xerxes, which invaded Greece, there were "chariots of war drawn by *wild asses*." M. Larcher, a celebrated commentator, renders them *zebres* in his French translation, which he supports from Oppian, lib. 3. v. 187. But it is now well known that the *zebra* is of a species entirely

cures, may, I believe, be ranked as another distinct race. Adanson, a French naturalist, who visited the river Senegal, more than half a century ago, describes those brought from the interior by the Moors, as so essentially different from any he had seen in Europe, (probably those of Spain, Savoy, or parts of France adjoining,) it was with difficulty he could recognise them to be the same species—neither do they answer the description of the wild ass of Asia, of which we have been speaking. But his account of them corresponds with the diminutive domestic race introduced from Africa, particularly those from Senegal and the Cape de Verd Islands; and from which the small race now in Europe and in this country, may with great probability claim their origin.

The Arabian ass, like the horse of that country, is considered as the most estimable of his species—and there are strong reasons for concluding that he is descended from the Hebrew *Aton*, so highly valued by Abraham and by the patriarchs, judges, and kings, at subsequent periods of sacred history; and that the same race has been preserved in the ancient land of Uz, in some degree of purity to the present time. Indeed, there can be but little doubt on the subject, if we admit the fact, that the habits, manners, and pursuits of the descendants of Ishmael have continued, with scarcely an *iota* of variation, from the day they took rank among the nations of the earth. The position is greatly strengthened by the information I

distinct from the *ass*; and Buffon asserts that none were ever discovered out of Africa, and there only in the southern hemisphere. It is therefore highly probable, that those alluded to were the *hemionus*, which are described as much larger than the *wild ass*, and nearer the size and form of the *zebra*. See Beloc's *Herodotus*, *Polymaia*, chap. 86.

received some years since from an intelligent traveller of undoubted veracity, who had visited Arabia on the south-western side of the peninsula to Mocha ; and on the eastern, as far as the mouth of the Tigris. He represented the superior race of asses of that country as most beautiful—of perfect symmetry, great spirit, activity, and vigour. He had seen those that could not be purchased for less than *four or five thousand dollars*—an enormous price, considering the value of money among those people.* I understand from him, that the Arabs were as tenacious of preserving the pedigrees of their horses, as the most careful breeder for the turf in England—and not less so of their asses. The descent of some of them they trace to those in the train of the queen of Sheba, when she visited Solomon—as they also do that of their horses to the numerous stud of that wise and gallant king.

Dr. Harris supposes the wild ass (*Para*) to be the *Onager* of the ancients ; and that the *Aton* was of a different kind. My impressions coincide with the opinion of the learned divine—but may not writers of different periods have confounded the wild ass with the *Aton* in their representations of the *Onager*? for it is not improbable, but that the *Aton* was of the most improved breed known, produced from crosses of a choice selection of the domestic, the wild ass, and the Hemionus, or wild mule—which last Professor Pallas recommends to complete the perfection of the species. This supposition is supported by Buffon, who infers

* Neibuhr remarks, “ there are two sorts of asses in Arabia ; the smaller or lazy ass, as little valued there as in Euorpe ; and a large and high spirited breed, which are greatly valued, and sell at a very high price ; I preferred them to horses.’ See Neibuhr’s travels in Arabia.

as a certain fact, that by a cross of the remotest of different races of the ass, the most beautiful productions are obtained.

Mules were in use and highly esteemed at a remote period of antiquity; and are mentioned in scripture as of importance in the equipage of princes. Herodotus, who is styled the father of profane history, frequently speaks of them; and it is known that they were introduced in the chariot races at the Olympic games in the seventieth Olympiad, about five hundred years before Christ. The Romans well knew their value. Pliny informs us, from Varro, that Q. Axius, a Roman senator, paid four hundred thousand sersterces, upwards of thirteen thousand dollars, for a male ass, for the propagation of mules. And he says further, that the profit of a female ass in breeding stock for the same purpose, was estimated in Celteria, now the kingdom of Valencia in Spain, at a like sum. We may infer from a passage in Tacitus, and in Plutarch's life of Marius, that mules were generally employed to transport the baggage of the Roman armies; and that it is not improbable the superior officers rode those of a high grade, having their horses led except when they engaged an enemy. It seems that the *dilletanti* of Rome held them in great estimation, as we are informed that the mules of Nero and Poppea were shod with gold and silver—not plates, as iron shoes are now formed, but the whole hoof enclosed.

Columella, who in the reign of the Emperor Claudius, published the most valuable treatise on the husbandry and economy of the Romans that has been handed down to us, has given very particular directions for breeding asses and mules. He was a native of Cadiz.

and owned estates in Spain, where it appears that the finest mules were then bred.

As it is not requisite to pursue our history of the mule any farther among the ancients, we shall drop their appellation of *male* and *female ass*, and adopt the modern one of *Jack* and *Jennet*.

Spain has continued to support the reputation for a superior race of mules to the present period : and it is probable, that the Arabian breed of Jacks were introduced by the Moors, when they held possession of that fine country, which, by crosses and the effects of climate and soil, have formed two valuable races, which we shall notice in the sequel. The Portuguese race have been generally considered as differing but little from the Spanish ; those, however, that have come within my view appear evidently inferior. It was not until near the close of the sixteenth century, that coaches were used in France ; before which, it is said, the nobles rode to court, parliament, &c. on mules, that were brought from the vicinity of the Alps and Pyrenees. They were usually black, of large size, well made, and mostly bred from fine Spanish mares. Savoy has long been noted for an excellent breed of mules. None very extraordinary are found in Italy : those used by the Velterino, are strong and of a respectable size, but of a sluggish and debased spirit. Very little can be said of those animals in Great Britain. The Catholic prelates brought over a number of superb mules, prior to the Reformation, but in the reign of Elizabeth so little was known of them, that a writer of that period says, “in Devonshire some were produced by a Jack brought from France, and were knocked on the head by the people, who viewed them as monsters.” A superior race of mules were bred in Flanders from Jacks introduced by

the Spanish monarchs while they held dominion in that country. Fifty of them were brought to England by the Duke of Cumberland, presented him by the Empress Queen, and from their beautiful appearance, engaged the attention of a few individuals; but the spirit soon subsided, notwithstanding those who bred and used them were warm in praise of their utility.

Among a voluminous mass of treatises on agriculture and rural economy, published in that country for near a century past, scarce a line can be found devoted to the mule; except by Dr. Anderson, who, in his "Recreations in Agriculture," has made a few judicious remarks on the subject.

In Sir George Staunton's account of Lord Macartney's embassy to China, we are told that mules are valued in that economical empire at a much higher price than horses. In our own country, prior to the war of the revolution, a few Jacks of an ordinary kind were imported; a small number of mules bred; and all exported to the West Indies. I have reference to New England, as I am not aware that any attention was paid to the system in the middle, or Southern States, though it is not improbable that some valuable mules may have been raised by the farmers and planters for their own use. When peace took place, the price of mules in the West Indies excited attention to the breeding of them, which was principally confined to Connecticut; and several cargoes of the small race of Jacks were imported from the Cape de Verd Islands, and St. Michael's, one of the Azores. It should be observed, that the exportation of Jacks from Spain or any of her colonies, was strictly prohibited, and continued to be until after the peninsular war.—There might have been, however, a few smuggled.

from the Spanish part of Hispaniola into Cape Francois, and from thence introduced, but they were vastly inferior to the Spanish Jacks. From this miserable stock a system of breeding mules commenced, the best calculated to deteriorate any race of animals that has been, or could be devised, since their creation. The purchaser of a Jack when about to commence mule dealer, made little inquiry concerning him but of his capacity to propagate a mule. He placed him in a district where there was the greatest number of mares of qualities so inferior that their colts would not compensate their owners for the expense of taking them to a horse, and contracted to purchase their mules at four months old. Those are kept in herds, with precarious shelter in winter, having ample opportunities afforded them, to mature and transfer that propensity for kicking, which seems at first merely playful, into an habitual means of defence, to be exercised when the *biped* or any other race of animals approach them. In this kicking seminary they remain two years, and are then driven to market. At subsequent periods, a few Jacks of higher grades were procured, from which a small number of good sized mules were bred, and a few of them broke. The breed of Jacks have somewhat improved, and mule dealers are now located in most of the New England States and some parts of New York. But the system as above detailed, with few exceptions, has continued; and it is from such a race of Jacks and such a system of breeding and management, that the mules have been produced, with which the farmers and planters of Maryland, Virginia, and the Southern States, have been supplied from New England; and such have furnished a criterion for a great portion of our countrymen to form an estimate of the value and properties of this degraded animal.

It affords great pleasure to be enabled, for a short time at least, to pursue our investigations in a higher sphere.

Several of my friends who had viewed the Jacks and mules, at Mount Vernon, in the life time of General Washington, gave such glowing descriptions of them, and understanding that part of that stock was inherited by George W. P. Custis, Esq. I was induced to address a few queries to him on this subject; this gentleman with his characteristic urbanity, very promptly furnished replies, with liberty to make such use of them as I pleased, and I cannot do better than to transcribe them from a letter received about three years since. Mr. Custis observes:

“The *Royal Gift* and *Knight of Malta*, were sent to General Washington about the year 1787—the *Gift* with a Jennet a present from the King of Spain; and said to have been selected from the royal stud. The *Knight* I believe was from the Marquis de Lafayette, and shipped from Marseilles. The *Gift* was a huge and ill shapen Jack, near sixteen hands high, very large head, clumsy limbs, and to all appearance little calculated for active service; he was of a grey colour, probably not young when imported, and died at Mount Vernon but little valued for his mules, which were unwieldy and dull. The *Knight* was of a moderate size, clean limbed, great activity, the fire and ferocity of a tiger, a dark brown, nearly black colour, white belly and muzzle; could only be managed by one groom, and that always at considerable personal risk. He lived to a great age, and was so infirm towards the last as to require lifting. He died on my estate in New Kent, in the State of Virginia, about 1802 or 1803. His mules were all active, spirited,

and serviceable; and from stout mares attained considerable size.

“General Washington bred a favourite Jack called *Compound*, from the cross of Spanish and Maltese. The *Knight* upon the imported Spanish *Jennet*. This Jack was a very superior animal; very long bodied, well set, with all the qualities of the *Knight*, and the weight of the Spanish. He was sire of some of the finest mules at Mount Vernon, and died from accident. The General bred mules from his best coach mares, and found the value of the mule to bear a just proportion to the value of the dam. Four mules sold at the sale of his effects. for upwards of \$800: and two more pairs at upwards of \$400 each pair; one pair of these mules were nearly sixteen hands high. The only Jacks I know of at present, of the genuine Mount Vernon stock, are, one sold by me to Judge Johnson, of South Carolina, for five hundred dollars, at two years old; one given by me to William Fitzhugh, Esq. of Ravensworth, and one which I believe is possessed by my uncle, Geore Calvert, Esq. of Riversdale.

“The Jack purchased by Judge Johnson, I have understood, has a very high reputation in the South.

“Upon losing my groom (Peter) who was the first and last groom to the Mount Vernon Jacks, I parted with my stock.

“There are many Jacks that have come into the country of late years, but of their value and properties I am unable to speak, though I rather presume they are generally small, and only fitted to get mules for the cotton cultivation in the light lands of the South. Some very fine mules are raised about Hagerstown, Maryland, from Jacks of the old breed; they are bred from stout wagon mares.

“As to my opinion of the value of mules, I shall always appear extravagant. I have scarce a horse on my estates for agricultural purposes, nor would I accept of one as a gift, (except for road wagons,) of which I have no need, as my property lies on navigable water. Nothing ever was so good as mules for the uses of this, our southern country; they live longer, eat less, and above all, are better suited to our slaves, than any other animal could possibly be: their strength, patient endurance of privation and hardships, slender pasturage, exposure—and in short, all those ills to which animals are subject where slaves are their masters, give to mules a decided preference in all the agricultural States of the South.

“I do not know of any being trained to the purposes of pleasure carriages. They are often ridden, and go pleasantly, with great surety of foot. I have no doubt but that in time, they will generally be used for carriages, and would particularly suit mail coaches; they are very swift, and have great durability in travelling.”

The *Knight of Malta*, mentioned by Mr. Custis, was unquestionably the first Maltese Jack ever brought to the United States. The second came in the frigate *Constitution*, on her return I think, from her first cruise in the Mediterranean; and I have understood was sold in the district of Columbia, or one of the adjoining States. Since that time a number have been introduced by officers of the navy from Malta, and the large Spanish breed from Minorca and Majorca. From the Mount Vernon and those stocks, some fine mules have been bred in the middle States, and probably farther South. A few valuable Maltese Jacks have been imported in merchant ships.

The impressions received, when on a visit to the West Indies in my youth, by observing, on the sugar plantations, the severe labour performed by mules in cane mills, induced me when I commenced farming, to purchase the first well broke mule I could light on; and notwithstanding he was so small as to require a vehicle and harness constructed purposely for him, his services were found so valuable, and the economy of using those animals so evident, that I was stimulated to great exertions for procuring several others of larger size; in this I succeeded, after great difficulty, to such an extent, as to have had more labour performed by them on farm and road, for thirty years past, than any person I presume, in New England; and every day's experience has served to fortify my conviction of the superior utility of the mule over the horse, for all the purposes for which I have proposed him as a candidate. And it should be considered, that those I have used were of an ordinary breed, vastly inferior to such as may be easily produced in our country, by attention to the introduction of a suitable race of Jacks, and a proper system of breeding and management. The question occurs, how is this to be effected? I will premise, that there exists a strong analogy between three varieties of the horse, and those of the domestic ass, considered the most valuable. We have the Arabian, the hunter, and the stout cart-horse. There is the heavy Spanish Jack, with long slouching ears, which Mr. Custis has described, that answers to the cart-horse; another Spanish breed called the Andalusian, with ears shorter and erect, of tolerable size, plenty of bone, active, more spirited, and answering to the hunter. Then comes the Arabian Jack, with ears always erect, of a delicate form, fine limbs, and full of fire and spirit. Judicious crosses from these

varieties, will be required to produce such kind of mules as may be wanted for general purposes. From the small Jack of African origin, with a *list* down his back and shoulders, are bred a small race of mules, by far the most hardy of any. With attention to selection in breeding the Jacks, with, perhaps, a dash of some cross of the foregoing description, a stock of mules may be produced, preferable to all others for the light lands and cotton culture of the middle and Southern States.

To procure any number of Arabian Jacks from their native country, is hardly practicable at the present time. Egypt has been celebrated by Sonnini and other travellers, for superb Jacks of the Arabian breed, which probably has been often improved by those introduced by the pilgrims from Mecca. I apprehend no great difficulty in obtaining them from that country. There is, however, no question but the Maltese Jacks are of the Arabian race, more or less degenerated. The most of those brought to this country that I have seen, were selected on account of their size, and had been used to the draught. I should recommend the selection of those that are esteemed most suitable for the saddle, as likely to possess greater purity of blood. A Jack of this kind, was a number of years since imported from Gibraltar, that had been selected by a British officer at Malta; and very much resembled the *Knight of Malta* described by Mr. Custis. I found upon a careful examination, that he differed but little from the description I had heard and read of the true Arabian race; indeed I could discover some prominent points and marks, that agreed with those found by professor Pallas to belong to the *Hemionus* or wild mule of Mongolia. From this Jack have bred a stock, out of a large Spanish Jenne. 5

the Andalusian breed, that correspond very minutely with Mr. Custis's description of *Compound* bred by General Washington, and also a mule, that now, not three years old, stands fifteen hands, and has other points of great promise.

Such have been the ravages of war and anarchy in Spain for a long time past, that the fine race of Jacks that country once possessed have become almost extinct. In Majorca, and probably some part of the coast of Spain opposite, the large breed may be obtained; and there formerly was a superior race in Andalusia, which it is hoped have been preserved.—Crosses on one of these breeds by the Arabian or Maltese, I consider indispensable to furnish a race of Jacks for the production of the most desirable mules, uniting the weight and bone of one, with the spirit and vigour of the other, although their height will in a great measure depend on the mares, yet if sired by full blooded Maltese Jacks, their limbs are too slender and their pasterns too long for heavy draught; but for the saddle, especially from blood mares, they are admirable, and out of stout mares suitable for light carriages.

My attention has been but lately directed to breeding mules; and those intended only for my own use. The system adopted is to halter them at four months, and have the males emasculated before six months old, which has great influence on their future conduct, and is attended with much less hazard and trouble, than it delayed until they are one or two years old, as is the general practice. If they are treated gently and fed occasionally out of the hand, with corn, potatoes, &c. they soon become attached; and when they find that "every man's hand is not against them," will have no propensity to direct their heels against him, and soon forget they have the power. In winter they should

be tied up in separate stalls, and often rubbed down. By such treatment there is not more danger of having a vicious mule than a vicious horse; and I am decidedly of opinion, that a high spirited mule so managed and well broke, will not jeopardize the lives or limbs of men, women, or children by any means so much as a high spirited horse, however well he may have been trained.

The longevity of the mule has become so proverbial, that a purchaser seldom inquires his age. Pliny gives an account of one, taken from Grecian history, that was eighty years old; and though past labour, followed others, that were carrying materials to build the temple of Minerva, at Athens, and seemed to wish to assist them; which so pleased the people, that they ordered he should have free egress to the grain market. Dr. Rees mentions two that were seventy years old in England. I saw myself in the West Indies a mule perform his task in a cane-mill, that his owner assured me was forty years old. I now own a mare mule twenty-five years old, that I have had in constant work twenty-one years, and can discover no diminution in her powers; she has within a year past often taken upwards of a ton weight in a wagon to Boston, a distance of more than five miles. A gentleman in my neighbourhood has owned a very large mule about fourteen years, that cannot be less than twenty-eight years old. He informed me a few days since, that he could not perceive the least failure in him, and would not exchange him for any farm horse in the country. And I am just informed, from a source entitled to perfect confidence, that a highly respectable gentleman and eminent agriculturist, near Centreville, on the Eastern Shore of Maryland, owns a mule that is

thirty-five years old, as capable of labour as at any former period.

The great Roman naturalist, in one of the most beautiful passages of his elaborate history of nature, observes that "the earth is constantly teased more to furnish the luxuries of man than his necessities."*— We can have no doubt but that the remark applied with great justice to the habits of the Romans in the time of Pliny; and I am much mistaken if ample proofs cannot be adduced, that it will lose none of its force or truth, at this present period, in all northern climates, or any section of the United States where the horse is employed for agriculture as well as for pleasure. Far be it from me, however, to disparage this noble animal; on the contrary, I feel a strong attachment for him, and at the same time a full conviction, that the substitution of the mule, for the purposes before stated, as extensively as may be consistent with the requisite production of each species, will have the effect of restoring the horse to the station from which he has been degraded, and place him as in former ages, upon a more dignified footing, an object of acknowledged luxury; and thereby introduce a more

* "It is the earth that, like a kind mother receives us at our birth, and sustains us when born. It is this alone, of all the elements around us, that is never found an enemy to man. The body of waters deluge him with rains, oppress him with hail, and drown him with inundations; the air rushes on in storms, prepares the tempest, or lights up the volcano; but the earth, gentle and indulgent, ever subservient to the wants of man, spreads his walks with flowers, and his table with plenty; returns with interest every good committed to her care, and though she produces the poison, she still supplies the antidote, though constantly teased more to furnish the luxuries of man, than his necessities, yet even to the last, she continues her kind indulgence, and when life is over, she piously hides his remains in her bosom."

correct system of breeding and management, in which our countrymen are so generally deficient, consequently more perfect animals and such an advance in the price of them, that will afford the farmer what he is now a stranger to—such remuneration as will make his brood mares a profitable species of stock. And it is obvious that the system will be followed by an improvement in the breed of mules, in the same ratio as the miserable race of scrub mares, which are now consuming the profits of agriculture, shall become extinct.

It does not appear that the horse was employed by the ancients for any purpose of husbandry. The ox and ass drew the plough and the wain, and performed all kinds of drudgery until after the *feudal system* was established in Europe, when the numerous retainers of the feudal lords, who held their lands by the *tenure* of performing knight's service, found themselves under the necessity of making the horses they were obliged to keep, contribute towards their support in the cultivation. From this time I believe, we may date, and from this cause may be attributed the introduction of the horse for the purposes of agriculture. Since that period, the history of Europe is little else than the annals of war and its preparations; and no material for that scourge, except the deluded human victims, seems more necessary than the horse—accordingly we find that throughout the whole country, from the Rhine or the Seine, to beyond the Danube and Vistula, which has been the principal arena, the system of agriculture has embraced, extensively, the breeding of horses of different grades and forms adapted to the several uses in war. Indeed whole provinces were appropriated almost exclusively to the rearing those animals for disposal to the different combatants; and it must be

obvious, that their general use in husbandry, at the same time, would follow as a necessary consequence. It cannot be expected therefore, but that the Dutch and Germans who have emigrated to our country, should bring with them such strong predilections for the horse, which have continued with most of their descendants, especially in those sections where communities of that respectable and industrious portion of our population have been located. In Great Britain, to the causes which have produced the effects described on the continent, may be added the insular position of the United Kingdoms, vulnerable from numberless and distant points, the horse has been considered, in connexion with the unconquerable spirit of the nation, as one of the most efficient means of repelling invasion: a circumstance that would of itself be sufficient to account for the over-weening attachment to this animal. But identified as his services have been for a long period, with the convenience, sports, and recreations, of all ranks and classes, and the science of breeding and training, forming a characteristic feature, it could not excite surprise, if the approach of that terrible spectre famine, should produce little or no effect in the reduction of the number. And although some of the most distinguished characters in the nation eminent for their practical knowledge in rural economy, have been for half a century advocating the substitution of the ox for the purposes of agriculture, and demonstrating the feasibility, economy, and vast saving of food, yet it is said the number of labouring oxen have lately diminished and horses increased. Five millions of the latter are now supposed to subsist in the United Kingdom, and two-thirds employed in husbandry—consuming, at a moderate estimate, the

product of twenty millions of highly cultivated acres !* And what is the consequence ? consumption follows so close upon supply, that at every season of harvest, let the preceding one be never so abundant, fast sailing vessels are found in the various ports, with their anchors *atrip*, to convey intelligence of the result, to all parts of the world where a surplus of bread corn is grown—exciting such an interest in our own country, that the farmer on the shores of Erie and Ontario, and on the banks of the Ohio, may be seen reading bulletins of British weather—the rain and sunshine of every day in August and the two following months—often within thirty days after the time of their publication in London or Liverpool. Can it be supposed that in a country where an attachment to the horse borders so nearly upon infatuation, that the question of the utility of the mule as a substitute, would be seriously agitated, or engage scarce a momentary investigation ?

In no country is the mule better adapted to all the purposes of husbandry, for which the horse is used, than in every section of our own. And it would be highly desirable to be able to exhibit a calculation of the actual saving, in dollars and cents, by his employment—but unfortunately no correct data can be had. And as I consider such calculations, unless founded upon experimental facts, and those multiplied, to be as “tinkling cymbals,” I shall merely submit a desultory

* Mr. Pitt, in an able “Essay on the consumption of corn,” published by the Board of Agriculture, in 1806, estimates that each draught horse, employed on roads, canals, and mines, in pleasure carriages of all descriptions, and carts in cities, consume the average product of *four* acres for oats and beans, and *three* acres for hay. It is stated in the same essay, that “the aggregate of oats *imported* into England (*only*) for twenty years, ending in 1797, amounted to the enormous quantity of 8,655,046 *quarters*”—upwards of *sixty-nine millions of bushels* !

comparison between the mule and the horse, derived from such facts as my own experience, and information from authentic sources, will justify the assumption of.

From what has been stated respecting the longevity of the mule, I think it may be fairly assumed, that he does not deteriorate more rapidly after twenty years of age, than the horse after ten, allowing the same extent of work and similar treatment to each. The contrast in the mule's freedom from malady or disease, compared with the horse, is not less striking. Arthur Young, during his tour in Ireland, was informed that a gentleman had lost several fine mules by feeding them on wheat straw *cut*—and I have been informed that a mule dealer, in the western part of New York, attributed the loss of a number of young mules, in a severe winter, when his hay was exhausted, to feeding them exclusively on *cut* straw and Indian corn meal. In no other instance have I ever heard or known of a mule being attacked with any disorder or complaint, except two or three cases of inflammation of the intestines, caused by gross neglect in permitting them to remain exposed to cold and wet, when in a high state of perspiration after severe labour, and drinking to excess of cold water. From his light frame and more cautious movements, the mule is less subject to casualties than the horse. Indeed, it is not improbable, but a farmer may work the same team of mules above twenty years and never be presented with a farrier's bill, or find it necessary to exercise the art himself.

Sir John Sinclair, in his "Reports on the Agriculture of Scotland," remarks that "if the whole period of a horse's labour be fifteen years, the first six may be equal in value to that of the remaining nine: therefore, a horse of ten years old after working six years

may be worth half his original value." He estimates the annual decline of a horse to be equal to fifty per cent. on his price every six years, and supposes one out of twenty-five that are regularly employed in agriculture, to die every year: constituting a charge of four per cent. per annum for insurance against diseases and accidents. He considers five acres of land, of medium quality, necessary for the maintenance of each horse, and the annual expense, including harness, shoeing, farriery, insurance, and decline in value, allowing him to cost two hundred dollars, to exceed that sum about five per cent. which is the only difference between the estimate of this illustrious and accurate agriculturist, and that of a respectable committee of the Farmers' Society of Barnwell district, South Carolina, who, in a report published in the Charleston Courier, of 23d of February last, state, that "the annual expense of keeping a horse is equal to his value!" The same committee also state, that "at four years old a horse will seldom sell for more than the expense of rearing him." That "the superiority of the mule over the horse, had long been appreciated by some of their most judicious planters—that two mules could be raised at less expense than one horse—that a mule is fit for service at an earlier period, if of sufficient size—will perform as much labour, and if attended to when first put to work, his gait and habits may be formed to suit the taste of the owner." This report may be considered a most valuable document, emanating as it does, from enlightened *practical* farmers and planters, in a section of country where we may suppose a horse can be maintained cheaper than in Maryland or any State farther North.

I am convinced that the small breed of mules will consume less in proportion to the labour they are

capable of performing, than the large race, but I shall confine the comparison to the latter—those that stand from fourteen and a half to rising of fifteen hands, and equal to any labour that a horse is usually put to. From repeated experiments in the course of two winters, I found that three mules of this description, that were constantly at work, consumed about the same quantity of hay, and only one fourth the provender that was given to two middling sized coach horses moderately worked. And from many years' attentive observation, I am led to believe that a large sized mule will not require more than three-fifths to two-thirds the food to keep him in good order, that will be necessary for a horse performing the same extent of labour. Although a mule will work and endure on such mean and hard fare, that a horse would soon give out upon, he has an equal relish for that which is good; and it is strict economy to indulge him, for no animal will pay better for extra keep, by extra work. But if by hard fare, or hard work, he is reduced to a skeleton, two or three weeks' rest and good keeping will put him in flesh and high condition for labour. I have witnessed several such examples with subjects twenty years old; so much cannot be said of a horse at that age. The expense of shoeing a mule the year round, does not amount to more than one-third that of a horse, his hoofs being harder, more horny, and so slow in their growth, the shoes require no removal, and hold on till worn out—and the wear, from the lightness of the animal, is much less.

In answer to the charge generally prevalent against the mule, that he is "vicious, stubborn and slow," I can assert, that out of about twenty that have been employed on my estate, at different periods during a course of thirty years, and those picked up chiefly on

account of their size and spirit, wherever they could be found, one only had any vicious propensities, and those might have been subdued by proper management when young. I have always found them truer pullers and quicker travellers with a load, than horses. Their vision and hearing is much more accurate. I have used them in my family carriage, in a gig, and under the saddle: and have never known one to start or run from any object or noise: a fault in the horse that continually causes the maiming and death of numbers of human beings. The mule is more steady in his draught and less likely to waste his strength than the horse: hence more suitable to work with oxen; and as he walks faster, will habituate them to a quicker gait.— But for none of the purposes of agriculture does his superiority appear more conspicuous than ploughing among crops, his feet being smaller and follow each other so much more in a line, that he seldom treads down the ridges or crops. The facility of instructing him to obey implicitly the voice of his driver or the ploughman, is astonishing. The best ploughed tillage land I ever saw, I have had performed by two mules *tandem*, without lines or driver.

There is one plausible objection often urged against the mule, that “on deep soils and deep roads, his feet being so much smaller than those of the horse, sink farther in; but it should be considered that he can extricate them with as much greater facility.

Few can be ignorant of the capacity of the mule to endure labour in a temperature of heat that would be destructive to the horse, who have any knowledge of the preference for him merely on that account, in the West Indies, and in the Southern States.

It is full time to bring our comparison to a close, which I shall do by assuming the position, that the

farmer who substitutes mules for horses, will have this portion of his animal labour performed, with the expense of one spire of grass instead of two; which may be equal, so far, to making "two spires grow where one grew before." For although a large sized mule will consume somewhat more than half the food necessary for the horse, as has been observed, yet if we take into account the saving in expense of shoeing, farriery, and insurance against diseases and accidents, we may safely affirm, that a clear saving of one half can be fully substantiated. But in addition to this, the *mule* farmer may calculate, with tolerable certainty, upon the continuation of his capital for *thirty* years: whereas the *horse* farmer at the expiration of *fifteen* years, must look to his crops, to his acres, or a bank, for the renewal of his—or perhaps, what is worse, he must commence horse jockey at an early period.

The intense interest with which the public mind is at present occupied on the subject of canals now in operation and progress, encourages me to offer the mule as an important auxiliary in the economy of their management; as I trust, it will not be denied, that on the cheapness of transportation on them, depends their utility as well as profit to the stockholders. The mule seems so peculiarly adapted for the labour on canals, that compared with the horse, he may be considered almost equal to a locomotive power engine. Among the advantages we have enumerated respecting his use in husbandry, the most of which are applicable to canal labour, that of the much greater security from diseases and casualties, which must necessarily require a great number of supernumerary horses, to prevent interruption in the line of passage, is not the least important, nor is the very trifling expense at which the mule can be supported during the winter months, as he will bear

being taken off his feed till the boats are about to be launched in the spring, and in a few days can be made fit for efficient duty—while a horse will require at least half feed if he does nothing, or must be fed high for some time before he can resume the labour that will be demanded of him. The same advantages may be derived by his employment on railways.

In a communication published in the *Utica Observer*, the 16th of May, inst. by Henry Seymour, Esq. one of the canal commissioners of New York, it is stated that a packet boat on the Erie Canal, requires a team of three horses to tow sixteen miles, going eighty miles in the twenty-four hours, including stoppages and detention at locks; the *relays* demanding fifteen horses for each nautical day. If it takes five days for a boat to be towed from Lake Erie to the Hudson, seventy-five horses will be required. I am not certain but it may be done in a less time, but as there must always be supernumeraries kept, we shall be within bounds to estimate that number. In the same communication the expense of each horse is estimated at fifty cents per day, I presume for subsistence only, without reference to interest or deterioration of capital, for the object of the estimate seems merely to show a comparison between the packet boats and freight boats, on a question of profit and loss: as it is remarked that “many contingent expenses might be added to both.” Taking this data, it will cost thirty-five dollars per day for the horse subsistence of a single packet boat. The freight boats require two, and allowing for the time occupied in taking in and discharging their cargoes, with the other necessary detentions, average forty miles per day—which being double the time of the packet boats, although they may not require the same number of relays, the expense cannot materially differ. From

these premises we may conclude, that for every boat navigating the grand Erie Canal, there must be expended *three hundred and seventy-five dollars* for the subsistence of the horses, each time they tow her from the Lake to the Hudson and back.* Now, if this can be done as effectually by mules for one half this sum, and with an extension of capital free of interest, fifteen years longer than that vested in horses, the aggregate of this immense saving will appear by ascertaining the number of boats at the present time on the canal. But this is out of my power, and I should, perhaps, lead the reader nearer the verge of incredulity, were I to offer my prediction what that number will be thirty years hence, the ordinary period of a mule's labour, and which will then be some years less than a single century since the *prime mover* and *guardian* of this stupendous undertaking, the present Governor (De Witt Clinton) of New York, first saw the light of Heaven.

I cannot resist an impulse to exhibit the mule in one other point of view. For the movement of *machinery*, the employment of this animal, when judiciously selected, has met with a most decided preference, in comparison with the horse, independent of the economy in using him. And if we consider the rapid and probably progressive increase of labour-saving machines, in every department where they can be made subservient to the requirements of society, it is

* This estimate (*three hundred and seventy-five dollars*) is the maximum of expense for subsistence and other items, supposing the whole number of horses should be required for *one* boat; but they will unquestionably be employed for a succession of other boats. And should all the *relays* perform a tour on the line every day, the minimum of expense would be *seventy-five dollars* for each boat. Facts derived from further information may enable us to fix the *medium*

evident that there will be a corresponding demand for animal power, as well as for that more potent, derived from the elements; and although the latter may vastly predominate, yet should the horse be employed, and his increase for other purposes continue, as it now does in the ratio of population, the number, at no very distant period, may become as alarming in our own, as it is at present in our mother country. And notwithstanding we may feel secure, from the extent of our territory and extreme diversity of soil and climate, but, above all, from being in possession of *Indian corn*—the GOLDEN FLEECE found by our “pilgrim fathers,” when they first landed on these shores; yet such peculiar advantages may not insure us against the visitations of one of the most distressing calamities that a feeling community can possibly be subjected to

Brighton, Mass. May 27, 1825.



APPENDIX

TO

MASON'S FARRIER;

CONTAINING

OBSERVATIONS AND RECEIPTS

FOR THE

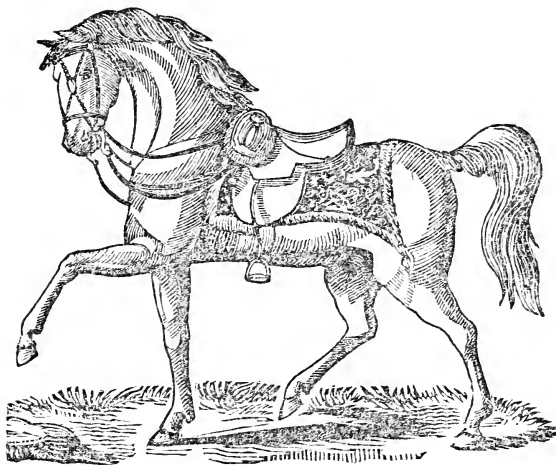
CURE OF MOST OF THE COMMON DISTEMPERS,

INCIDENT TO

**HORSES, OXEN, COWS, CALVES, SHEEP,
LAMBS, SWINE, DOGS, &c. &c.**

SELECTED FROM VARIOUS AUTHORS

APPENDIX.



OF THE DISEASES OF THE HORSE.

1. *The diseases of the horse* are as numerous and as important as his complicated structure and the artificial state of his present mode of life would lead one to expect. Until of late the treatment of these diseases was confined to the hands of ignorant farriers presumptuous grooms, or shoeing smiths ; and the fate of the animals was commensurate with the wretched treatment they were subjected to The establishment

of a school for the veterinary art, has disseminated an improved practice, and spread improved practitioners throughout the country; and we would earnestly recommend an application to one of established reputation in all cases of difficulty and danger. But as it is not always that such a one is within reach, to enable the agriculturalist to have in his own hands the means of informing himself, or to being a check to others, we submit a concise view of the diseases of the head, neck, trunk, and extremities, preceded by some general observations.

GENERAL REMARKS

On the Healthy and Diseased State of the Horse.

2. *Condition of Horses.*—Being in condition, in stable language, signifies not only perfect health internally, but such an appearance externally, as the philosopher would call unnatural, or at least artificial: while the amateur considers it as an essential requisite to the other qualities of the horse. This external condition is denoted by a sleek, short, shining coat, with a degree of flesh neither bordering on fatness nor emaciation. Even in this sense of the term, *condition* must be varied according to the uses of the animal. In the cart horse, provided there be a sleekness of coat, looseness of hide, sound wind, freedom from grease or swelled legs with good digestion; a fulness and rotundity of bulk, instead of detracting from his beauty or impeding his exertions, will add to the one and assist the other. In the coach horse, the hackney, the hunter, and the racer, a different *condition* is expected, varying in different degrees from that of the cart horse. In both cart horse and racer, it is equally necessary that the various internal organs should be in a state to act uninterruptedly for the benefit of the whole; but in addition to this, it is necessary to the racer, that the greatest possible quantity of animal fibres should be condensed into the smallest possible bulk, and that the absorption of all useless fat and other interstitial matter should be promoted by every possible means, as essentially necessary to unite lightness of body with full strength and elasticity. It is in the attempts to produce such a state in its full perfection, that all the *secrets of training* consist: but whether a total departure from natural rules, by

unnatural heat, deprivation of light, stimulating food, restraint from water, and excessive clothing, are best calculated to promote it, admits of much doubt; and it is to be observed that the dawn of reason and science appears to be shining through the crevices of these darkened casements; for even at Newmarket the system has lately much relaxed from its artificial rigor.

3. *To bring a horse into condition*, not only should the purposes he is intended for be taken into account, but also his previous state. If he be taken up from grass with much flesh on him, it is evident that what is required is to remove the soft interstitial matter it may be supposed he has gained by green food, and to replace it by hard flesh; and also to produce a sleekness of coat and beauty of appearance. To accomplish these ends, the horse should be accustomed to clothing and the full heat of the stable by degrees only; and also by degrees only to the meditated change of food; which is best done by mashes. In two or three days a mild dose of physic may be given, during all which moderate exercise only should be allowed, as walking, but which may be continued two hours at a time. After the physic has set, begin to dress his coat, increase his exercise and his food, and accustom him to an increase of warmth. In four or five days time again mash him for two days and give a second dose of physic, a little stronger than the first. (123) After this still further increase his warmth, his exercise, and his food, by which his belly will be taken up, his flesh will harden and his coat begin to fall. A third dose of physic or urine balls, &c. are only necessary in the training of hunters, &c. and even in these, a gradual increase of exercise, rather long continued than violent, with proper food, will effect the end, if not so quickly, more beneficially to the animal. *To bring a lean horse into condition*, a somewhat different plan should be pursued. If from grass, still mash him for a day or two, by no means stint him in his water, and with his mash let oats be also soaked. If oats be speared or malted, it will produce flesh sooner. But even here, give the horse moderate walking exercise, and if he be not too much reduced, add a mild dose of physic to prevent his heels flying, or his getting hide-bound by the increased food; but if great emaciation forbid the physic, give him nightly an alterative. (*Vet. Pharm.* 129, No. 1.) As his appearance improves, gradually harden his food and increase his exercise.

4. *Diseased condition of horses.* What has been already said relates to that alteration from one state to another, neither being an

unhealthy one, which custom has rendered necessary; thus a man in training for running or fighting, and a man out of training, are both considered equally healthy. But there are circumstances that produce a *morbid state of condition* different from all these. It is common to hear persons say "my horse is sadly out of condition, and I cannot tell either what is the matter with him, or how to get him into better case." Various are the causes that may produce this: a sudden alteration of the food, or temperature, or of habits altogether, may become a cause. Removing a horse from grass to a heated stable, full feeding, and hard exercise, will often do it: therefore these changes should always be gradual. Bad food, as mow-burnt hay, musty oats, beans, &c., likewise mineral waters, foul air, &c., are frequent causes. Diabetes, or profuse staling, is often brought on by these means, and the *condition* of the horse becomes greatly reduced. It is requisite, therefore, to enquire whether any of these errors are in existence, and to immediately remove them: but it often happens that the stomach has become relaxed and the hide become bound; neither of which readily remove, even though the original evil may be amended. When the relaxed stomach has produced lampas, treat the mouth as described under that disease (25,) but the stomach itself must be principally attended to.—First mash and give a dose of physic; after it has set, commence the treatment, if the horse be of a full habit, by moderate bleeding and a nightly *alterative*. (*Vet. Pharm.* 129, No. 1 or 2.) But if he be not in full, but in low flesh, commence by a daily *tonic*, (*Vet. Pharm.* 130, No. 1 or 2,) which will gradually remove the swelling within the mouth, and loosen the hide. A sudden cold applied to the skin often brings on a want of *condition* with *surfeit*. In which case, bleeding, with nightly *alterative*, (*Vet. Pharm.* 129, No. 1 or 2,) with or without an assistant dose of physic, as the habits of the horse may require, constitute the proper treatment. *Worms* form another cause of *morbid condition* which are to be removed as described (57.) *Excessive fatigue* is also productive of a bad state of *condition*, which often proves very obstinate. Turning out to very good grass is the quickest cure, and when that is impracticable, soiling in the stable, or feeding with carrots, parsnips, beet root, &c. will be food restoratives; as medicines give tonics daily. (*Vet. Pharm.* 130, No. 1 or 2.) It will be only necessary to add, that in considering the state of a horse's *condition*, the effect is apt to be mistaken for the cause, and the symptoms for the disease. Hide-bound and lampas are not in themselves any thing more than effects, or symptoms; the former being commonly, and the latter always dependent on a deranged

state of the stomach: both are therefore to be treated accordingly. Exactly the same will apply to all the other symptoms of *morbid condition*.

Inflammatory Diseases of the Horse.

5. *The inflammatory diseases of the horse* are numerous, but his fevers are few: a febrile state being generally brought on by the inflammation of some important organ. Inflammation may be considered as general or diffused, and local or confined, and both seem to arise from an affection of the blood vessels, and perhaps from a peculiar state of the blood itself.

6. *General or diffused inflammation* constitutes fever or extensive inflammatory affection, and appears to consist in an increased action of the heart and arteries, accompanied with an increase of heat. In some instances where the fever is purely symptomatic, and dependent on the inflammation of some important organ, as the lungs, or the intestines, the circulation appears retarded rather than increased, from interruption arising to its passage through the heart.

7. *Local or confined inflammation* is also dependent on an affection of the blood vessels, but confined principally to the blood vessels of the part affected. It is betokened by redness in the skin, tumour or swelling, heat and tenderness, with pain. Inflammations, both diffused and local, are brought on by excitements, such as over feeding, excessive heat, reaction produced after cold, and the reaction produced by inordinate exertion. Those more exterior, arise from injuries, the application of improper substances, &c. Inflammations *terminate* in various ways; but it is to be remarked that in consequence of the very large circulatory system of the horse, his febrile affections rage higher.

and terminate sooner than in man. The usual termination of inflammatory affections in the horse, are by resolution, effusion, suppuration, and gangrene. Scirrhus is not at all a common termination of inflammation in the horse.

8. *Inflammation of the brain, (phrenitis) brain fever, phrensy fever, staggers, mad and sleepy.* There are few diseases more likely to be mistaken by inexperienced farriers than this; it is not to be wondered at, therefore, if indifferent persons should be led into error by it. It appears in two forms, a violent frantic one, and a sleepy lethargic one; and the latter appearance is also common to a disease, not dependent as this is, on idiopathic inflammation of the brain; but on a paralytic affection of the stomach, and thence it is called stomach staggers. This latter affection, however, may be distinguished from the former by attending to the colour of the eyelids, nose linings, mouth, &c. which in stomach staggers are usually more yellow than red; whereas in sleepy staggers, they are more red than yellow. Inflammation of the brain shews itself in general cases by disinclination to food and motion, drowsiness, accompanied by a heaviness and closing of the eyelids, with moisture and redness of them; and also of the linings of the mouth and nose. Sometimes these symptoms increase, until the horse becomes comatose, and after a few frightful struggles, sinks to rise no more. In these cases the pulse is apt to be oppressed instead of increased. But most frequently after the first stages he becomes furious, plunges about, and is vicious to himself and others, approaching to a state of madness, in which state he continues till he sinks from his own exertions, when he rises again to renew his violence.

9. *The cause of staggers may be various:* the immediate are either an original accumulation of blood within the brain, or the translation of the inflammation of some organ to the brain: as a remote cause is often brought on by too full feeding, without sufficient exercise, and particularly in horses at one time working very hard, and at another suffered to remain inactive; but which horses, whether used or not, are equally fed. Sudden cold, violence, &c. may bring it on.

10 *The treatment of staggers* should be begun by abstracting a very large quantity of blood promptly, by opening both jugulars,

and letting the horse bleed to the amount of ten or even twelve quarts; repeating the same until the delirium ceases. After the first bleeding, back rake, throw up a laxative clyster, (*Vet Pharm.* 143.) blister the head, promote a current of free air in the stable, and treat altogether as directed under other febrile infections.

11. *Locked jaw, stag-evil, or tetanus*, arises from cold, excessive fatigue, sometimes perhaps from worms, but more often from a wound of some part, as pricks in shoeing, &c. Such wound is seldom in a recent state; but after two or three weeks continuance, sometimes after it has healed even: it follows docking, gelding and nicking frequently; and is preceded by a flabby unhealthy state of the wound. It appears as an affection of the brain, which transmits its morbid irritation, particularly to the nerves attached to muscles, by which they become cramped, or may be considered as in a high state of action, giving the horse a peculiar look of energy, as though immediately stopped from full speed; with his nostrils extended, his head raised, and his nose carried forward; his legs straddle wide, and his tail is cocked and quivers, as after violent exercise. The jaws will now be found, if not closed, yet nearly so, when he is called *jaw set*.

12. *The treatment* is not often successful, but, however, it is sufficiently frequent that it is so, to deserve the utmost attention. Blaine informs us that enormous bleedings have succeeded; but he places his principal dependence on the application of cold by means of ice, or of constant dashing with cold water, with an active blister applied the whole length of the spine. Balls of camphor and opium, to the amount of two drachms each, may be given every three hours. If any room remain in the mouth, the ball may be passed up by means of a stick, or it may be given as a drink by means of a syringe, and even when the mouth is entirely closed, he informs us we may give a drink by the nostrils. Moorcroft used cold also. Fearon, on the contrary, has experienced benefit from a bath, heated to ninety degrees, and kept at that temperature for three hours. White recommends camphor and opium; Wilkinson of Newcastle, has been very successful by keeping up heat and stimulus over the skin in general, by means of newly stripped sheep skins put on hot. Perhaps if the body were previously rubbed with oil of turpentine one part, and common oil two parts, it might assist Wilkinson's plan. When *locked jaw* arises from nicking, it might be prudent for a veterinarian

surgeon to dissect down on the nerves of the tail, and divide them; and when from nicking, it would be advisable to cut off another portion of the tail, which practices in both instances would afford a moderate chance of saving the animal. It is necessary further to remark, that it is of great consequence that the bowels be kept free from fæces, by raking and clysters. With regard to the latter they are very important in this disease, as a medium, commonly the only one, of giving support. A horse has been kept alive on nourishing clysters alone, for seven or eight days. (*Vet. Pharm.* 145.)

13. *Catarrhal fever, epidemic catarrh, influenza, distemper, cold morfoundering, &c.* These names apply to one common disease which often in rainy, variable seasons appears as an epidemic, and affects thousands of horses at once. It is observed to be particularly prevalent in this form in the spring of some years, more than of others. It is not contagious like the more malignant form, but is brought on as an epidemic by the same causes being applied to nearly all subjects alike; which are alterations of heat with cold, moisture, and dryness, &c. In crowded cities and large towns, it is more prevalent than in more open situations, and it is more frequently found in the young than in aged horses. Where it does not exist as an epidemic, it is brought on by an accidental cold taken. It is of great consequence to distinguish it from pure inflammation of the lungs, with which it is very apt to be confounded; and which mistake is often a fatal one, from the treatment being in some essential particulars different. Inflammation of the lungs commences by a short cough, without much other disturbance to the health, than the pain it gives the horse to cough, but which is often so considerable as to make him stamp his feet while coughing. If a horse in the distemper coughs early, it is not a hollow, harsh sounding, and distressing cough of this kind—it expresses uneasiness, it is principally from a sore throat, which is very common in distemper, but by no means common in pneumonia. The sore throat in distemper gives the horse a disposition to refuse his food, or he chews it and lets the quid fall without swallowing it. He refuses water, particularly if it be placed on the ground; his cough is quick, short, and usually sounds more moist than harsh and dry; but though common, this is not invariably the case; his eyes are heavy and moist, his breathing is quickened, and his ears and legs are alternately hot and cold. His nose on looking into it is redder than usual, and sometimes his glands as well submaxillary or jaw glands, as his parotid o

rives are tumefied. On the second or third day, excessive weakness comes on; the cough becomes more painful, the pulse is quickened, and the nose begins to run. After which the horse either runs off the disease by this suppuration, or it goes on to destroy him by the height of the fever, and degree of weakness produced or by suffocation from water in the chest. Now and then, although recovery takes place, an obstinate cough is left; and in a few cases the disease terminates in glanders.

14. *The treatment* may in some cases be cut very short, for as in almost every instance a shivering fit begins the disease, so when many horses are in a stable, and the disease is very prevalent, those who have not been attacked should be watched, and the moment such an attack does take place, give of *sweet spirit of nitre*, or when not at hand of *spirit of hartshorn*, an ounce, in a pint of sound ale. Exercise the horse briskly, then well hand rub him, clothe him warmly; and it is more than probable that the disease will be cut short. But should it proceed, or should the disease have gone on unobserved to the appearance of the symptom detailed, begin by bleeding moderately, if the horse be not already weak; or if there have not appeared the running of matter from the nose. If there have, the bleeding had better be dispensed with, unless the fever appear, from the quick full pulse and redness of the inner surface of the nostrils and eyelids, to be still so considerable as to require it; in which case we must not be deterred from one moderate bleeding; and which, if the febrile symptoms do not abate, may be even repeated. It will, however, in general cases, be advisable to avoid bleeding after the second day of the attack, or after the running has appeared from the nose, or after considerable weakness has come on. In all cases a very cool temperature is essentially requisite; hot stables, or hot clothing are very pernicious, but particularly the former. A hood is not improper over the head, because it encourages the running to make an early appearance; and for this reason a warm mash may advantageously be hung round the neck three or four times a day. Before the running commences, give night and morning, the fever powder (*Vet. Pharm.* 157, *No. 1 or 2.*) in a mash or drink; after the running has come on, or as soon as the weakness has become considerable, give night and morning either of the fever drinks (*Vet. Pharm.* 158, *No. 3 or 4.*) Malt mashes, when the weakness is great, are proper; at other times, bran mashes with plenty of chilled water are best. To relieve the throat, rub the outside with mild liquid plaster, (*Vet. Pharm.* 142,) and if the weather be warm enough to allow it, two or three hours turning

out in a field each day is proper. Green meat in the stable, when it can be procured, should likewise be given.

15. *Malignant epidemic, murrain, or pest.* Now and then the distemper or influenza assumes a character of uncommon malignance, which is happily not frequent here, but not unfrequent in continental countries, sweeping off a third of the horses and kine, without any means being found sufficient to arrest its progress. In these cases it is found highly contagious, attacking almost all the horses as well as cattle within its sphere of action, or which communicate with each other. Dr. Layard, and Osmer, English writers of established reputation, noticed the appearances of this disease long ago; and their descriptions are not different from the milder kind noticed (13) but in degree. The throat is intensely sore, and the mouth ulcerated; the glands of the head swell, and sometimes these and other parts suppurate and burst. The matter from the nose is bloody, and the stench intolerable; the weakness is also peculiarly great, and shows itself early.

16. *The treatment* recommended by Blaine is the early use of malt mashes; even ale is indispensable. Green meat should be allowed, and a very cool stall is necessary, having a free communication with the open air. As medicine, three doses are necessary, every day, of the malignant epidemic fever drink, (*Vet. Ph.* 160.) half a pint of yeast with a pint of ale has been given, with good effect, three times a day; also, to prevent the infection from spreading, fumigate the stables and all the outhouses with the preventive fumigation. (*Vet. Ph.* 161.)

Diseases of the Head.

17. *Epilepsy, megrims, sturdy, or turnsick,* are epileptic attacks of greater or less violence, and which are apt to be confounded with the accidental strangulation that sometimes takes place from a collar too tight, or from driving a horse hard up hill, &c. The epileptic fit makes its appearance by a sudden stop; if the horse be in action he shakes his head, looks wild and irresolute, but after some time proceeds; when more violent, he suddenly falls down, is convulsed, dungs and stales insensibly, and remains some time before he recovers. This disease, like staggers, is generally the consequence of two full a habit; and is, therefore, best relieved by bleeding, and a more moderate diet; and, where it is convenient, a run at grass should be allowed to alter the habit.

18 *The diseases of the horse's eyes* are not numerous, but they are very destructive. The principal are ophthalmia and gutta serena

19. *The ophthalmia, lunatic, or moon-blindness*, is a very peculiar disease among horses, affecting their eyes generally about their full growth, but sometimes later, and seldom earlier. It is but little known among mules and asses, and unknown in oxen and sheep. It does not, however, appear to be a disease natural to the horse, as wild, or even horses subjected to artificial restraints are not observed subject to it. But among others, it is become so common as to have the tendency handed down in the breed; the progeny of some stallions being more prone to it than others.—It is often very sudden in its attack, the eyelids being found swelled and almost closed to avoid the light; they are also very red within, and the haw is half drawn over the surface; the tears flow down the face perpetually, and the whole head is hot; now and then these appearances come on gradually. The suddenness of the attack makes the complaint to be attributed to accident, as blows, nay seeds within the eye, &c. and it is frequently difficult to get the owner of such a horse to believe that a constitutional attack, as it usually is, can come on so suddenly. Sometimes as it comes on, so it goes off as quickly, the eye from being opaque and milky, in twenty four hours becoming clear and almost well. When such an attack has taken place, even if nothing be done, the horse sooner or later amends, and the eye or eyes, for it is sometimes one and sometimes both that are so attacked, become again clear and well, and remain so an indefinite period, from five or six weeks to as many months. Another attack, however, sooner or later follows, to which others succeed, each leaving increased milkiness on the outer coats, and some dimness within the pupil, either speck-like or diffused; and finally the horse becomes blind from *cataract*. When one eye goes blind totally before the other, it is often a means of preventing the future attack on the remaining one; which has given rise to a custom of putting out one eye to save the other, and which has succeeded. As this is a constitutional disease, brought on by artificial habits, as over exertion, close unhealthy confinement, and heating food; so it is clear the abstraction of all these are necessary to remove the complaint, and to prevent a recurrence; but particularly the close, dark, and unventilated state of the stable should be attended to, as well as the removal of the litter, which retains the volatile alkali of the urine, and irritates the eyes most injuriously. The food should be mild and cooling, and the exercise moderate but long continued. Under the height of the attack, however, rest is advisable, with moderate light, which may be still further moderated by keeping over the eye or eyes a thick cloth, wet with goulard water. (*Vet. Ph.* 154.) Sometimes one quarter of vinegar to three quarters of water has

been found a useful application, and which ever is used, the eyes and eyebrows should be kept continually wet with it, which by exciting evaporation will keep the part cool. A seton may be introduced under the eye or jaw. In some cases, blistering the forehead or cheek is found useful; but in every instance bleeding is proper, which should be repeated until the disease lessens. When the horse is very full and gross, physic and alteratives assist the cure. When blistering is used in any part near the eye, the greatest care is requisite to prevent the blistering matter from being rubbed into it.

20. *Gutta Serena* or *glass eyes*, so called from the peculiar glassy appearance of the eye, arise from a paralysis of the optic nerve. As the eye is not materially altered in appearance, a horse often becomes blind without its being noticed, until his cautious stepping, quick motion of his ears, &c. give notice of the case.—On examination it will be found that the pupil remains dilated, however great the light, and the eye is irrecoverably lost. In the very early stages, blisters to the forehead and stimulants to the eyes, (as white vitriol a drachm, water four ounces,) may be tried, but with faint hopes of success.

21. *Poll-evil*. This complaint commonly requires the attendance of an experienced practitioner—but the prevention is often in the power of owners and others about horses, and to this point we shall particularly direct their attention. Poll-evil is commonly the effect of accident. Repeated small blows of the manger, or continued pressure from hanging back on the halter, &c. will, if not remedied, produce swelling at the nape of the neck, with some tenderness. In this early state, if the collar be removed and the part be kept continually wet with vinegar and water, the swelling will often disperse—but if, in spite of this, it proceeds to suppuration, let a vent be made for the matter by a seton [116] so that it may readily flow out. Introduce nothing healing, but encourage a free discharge, and it may heal at once. When such is not the issue, the disease attacks the ligaments; sinuses form and the matter burrows under the skin and muscles, when a seton must be introduced from the opening above and should be brought out at the bottom; the seton should be then daily wetted with the liquid blister. (*Vet. Pharm.* 141.) Should this plan fail, escharotics will be required in the form of scalding mixture. (*Vet Pharm.* 165.)

22. *Strangles, vives* or *ives*. This disease has been likened to the human measles, because it usually attacks every horse, and

most of them at a young period, between three and five years; it is fortunate when it attacks colts at grass, as it seldom occasions inconvenience, and which has led some persons into error by turning their horses out as soon as attacked; but it is not found that stabled horses, thus turned out, pass through the disease more mildly, but the contrary, except the disease exists under its mildest form. White has conjectured that colts breeding the strangles while at grass, are afterwards exempt from glanders, but this wants confirmation. Prosser has also affirmed, that inoculation by the matter of strangles, is good, because it mitigates the complaint, and renders the horse not liable to any future attack; but the practice has never gained ground: when strangles occurs in the stable, and now and then in the field, it proves a severe disease, and shows itself under the appearance of a cold, with cough, sore throat, and swelling of the glands under the jaw, or behind and under the ears. Some times there is not much external swelling, and the tumours break inwardly, and nature effects a cure; at others they break outwardly, and the disease runs off that way, and some times the swellings disperse either by nature or art, which breeders think unfavourable, as they suppose it renders the animal liable to a future attack; but many so treated, pass the remainder of their lives without more affection.

23. *The treatment of Strangles.* When the swelling lingers, and neither comes forward or recedes, poultices are preferable to fomentations, which, by leaving the horse wet, promote evaporation and produce cold. Peal recommends blistering the part, as the best means of promoting suppuration. The horse should be kept very cool, and bran mashes with warm water should be his principal support, unless the complaint lasts long, and produces much weakness, when malt mashes should be substituted; bleeding is only advisable when the early symptoms are violent, as heaving at the flanks, extreme soreness of throat, with much swelling around it, and considerable cough, in which case bleeding, and fever medicines are proper.

24. *Vives, or ives,* is supposed to be a relic of the latter complaint, and it does appear now and then that after the strangles, the parotid or vive glands do remain enlarged [24,] which occasions the disease in question, resolution may be attempted by mercurial frictions, suppuration should be avoided, otherwise the gland may be destroyed

25. *Diseases of the mouth, lampass.* All horses, but particularly very young ones, are liable to enlargement of the rugæ or ridges

of the palate, dependent not on any local disease confined to the part itself, but occasionally by an affection of the whole passage of the mouth, throat, and stomach. It is usual to attend to the part only, which is sacrificed or burnt to little purpose, when a mild dose of physic, or gentle alteratives, would prove more certain expedients; to which may be added rubbing the part with bay salt, or with vinegar.

26. *Bridle sores.* When the bit in colt breaking, or in hard pulling horses, has hurt the bars, care is requisite to prevent the bone becoming carious. Touch daily with ægyptiacum, and cover the bit with leather, unless total rest can be allowed.

27. *The teeth*, which present themselves on the lower parts of the jaws, are the incisive and canine. The two front incisives are properly called nippers or gatherers. The two next adjoining separators or middle teeth, and the outer, the corners; but it would be more indefinite to say the first, second, and third incisives, beginning at the corner. Tusks or tushes occupy a part of the intermediate space between the incisive and grinding teeth.—The teeth, as criteria of age, will be seen by reference to Mason, (page 72.)

The teeth of the horse are the hardest and most compact bones of the body. There are usually forty of them in the horse, and there are thirty-six in the mare; in which latter, the tushes are usually wanting. In anatomical language, they are divided into *incisores*, *cuspidati*, and *molares*, or according to the language of farriers and horsemen, into twelve *nippers*, four *tushes*, and twenty-four *grinders*, which numbers are equally divided between the two jaws. The teeth are received into indentations or sockets between the bony plates of the jaw, called *alveoli*, by cone-like roots. The bodies of the teeth are principally composed of two substances, one of the nature of common bone, giving bulk and form, and one of extreme hardness, placed in man and carnivorous animals wholly without the teeth to give strength and durability: but the horse and other granivora, the latter particularly, is placed in the grinders, in perpendicular plates, within the body of the teeth; by which contrivance, a rough grinding surface is kept up; for the mere bony parts wearing faster than the lamellæ of enamel, it follows that ridges remain to triturate the vegetable matter that passes between the teeth.

There are *two sets of teeth*, a temporaneous or milk set, and a permanent or adult set, in which wise provision, man and most

on the sides participate. The milk set are some of them, as the molars, apparent at birth; there being usually six grinders in each jaw, three on each side in the new born foal, and which number of this set is never increased. The nippers begin to appear soon after birth, and follow a regular order of succession, until the animal is three or four months old; at which time he begins to require support from herbage as well as milk. The temporaneous set remove gradually one after another; had they all been displaced at the same time, or even had several of them fallen out together, the animal must have suffered great inconvenience, and perhaps have been starved. This removal, which commences at the age of two years and a half, and is completed between the fourth and fifth year, is effected by the action of the absorbents on their fangs, and appears to be occasioned by the stimulus of the pressure received from the growing teeth under them. For although these two sets appear with an interval of some years between them; yet the rudiments of both are formed at nearly the same period, and both sets may be thus seen in a dissected jaw. Regulated by the stimulus of necessity, as soon as the temporaneous set falls out, the permanent appears: and that such appearance follows the necessity, is evident; for a premature or accidental removal of the colts' teeth is soon followed by the appearance of the others. Dealers and breeders aware of this, draw the milk teeth to make their colts appear as horses. It was necessary there should be two sets of teeth, for as they grow slowly in proportion to the jaws, so had there been but one only, the disproportion of growth between the teeth and jaws must have separated them.

The forms of the teeth vary more than their structure. The incisive or nippers are round, which is favourable for the pressure they undergo; the upper more so than the lower. On the upper surface a hollow is seen in the young tooth, which, not extending through the whole substance, naturally wears out with the wear of the tooth; and as a considerable degree of regularity occurs in this wearing away in all horses, it has gradually settled into the general criterion of age. The nippers are not all of them exactly similar; the corner teeth differ most in being exactly triangular, and in having an interval wall or side, which does not become level with the rest until long after the others. The cuspidate tusks or tushes are permanent, appearing at about five years, or rather earlier; those in the front jaw are usually nearer the nippers than those below. Each presents a slight curve, which follows the direction of all the canine or pugnatory teeth of other mammalia. The pointed extremity wears away by age, leaving merely a buttoned process, which may

serve as a guide to the age, when the horse is suspected to be bishoped, as it is called, from a man of that name who was peculiarly dexterous in imitating on old teeth the disincave cavity of youth. The molar or grinding teeth are stronger in the upper than in the lower jaw; which was necessary, as they form the fixed point in the process of grinding. The upper surface presents nearly a long square, indented from the alteration of the enamel with the bony portions; and as the interior or upper teeth hang over the posterior, so the ridges of the one set are received into the depressions of the other.

Wear of the teeth. The teeth, in a state of nature, would probably present a surface opposed to each other for mastication to the latest period of the most practised life; but the removal of the animal from moist food to that which is hard and dry, must occasion an unnatural wear in those organs; and hence, although the teeth of the horse, even in a domesticated state, are not subject to the caries of the human; yet the grinders are liable to become thus injured by continued exertion. In the young or adult horse, the upper and under grinders do not meet each other horizontally; on the contrary, they have naturally an inclination obliquely inwards, and those of the upper jaw present small spaces between each other, while those of the lower are more continuous: by which means as the food, but particularly as interrupted portions, as grain, become ground, they fall into the mouth to be replaced under the grinding surface, if necessary, by the joint action of the tongue and muscles of the cheek. This arrangement becomes in a great measure frustrated in old horses, by the superior wear of the inner surface of the upper grinders, as well as by the general misapplication of the surfaces of both upper and under teeth, by constant attrition when worn down to the gums nearly. The unfortunate animal feels sensible of this, and endeavours to remedy it by throwing the wear on the outer edge, by an inclination of the lower jaw and of the head in general; and which is so particular in its appearance as to engage the attention of the by-standers. This defect may be in a considerable degree remedied by casting the animal, and having opened and wedged the mouth so as to keep it so, with a well tempered concave file to remove the inequality as much as may be. When the defect is considerable, and the horse is mild and quiet, it is better to file the inequalities every day, which will gradually but effectually wear them down. It however happens, that the inclination thus to wear is commonly resumed, and gradually the same loss of nutriment takes place; in which case, soft moist food, as carrots, mashes, soiling, or grazing, must be substituted for harder

substances, and if corn be actually necessary, let it be bruised. Whenever an old horse betrays symptoms of want of condition, or weakness and emaciation, that neither his mode of feeding nor his ratio of work will account for, and particularly if whole grains should be found in his dung, his teeth should be examined carefully. This undue wearing of the teeth occasions another evil often, which is ulceration of the cheeks, by reason of the projecting ragged surface of the uneven teeth, which can only be remedied by the removal of such portions. These projecting portions are called by farriers, *wolve's teeth*.

Diseases of the Neck.

28. *Fistulous withers* are brought on usually by pressure from a saddle with too low or narrow a tree, and what has been said both with regard to prevention and cure on the subject of poll-evil, applies here also. (116.)

29. *Sore throat* is common to horses in colds, in influenzas, and in strangles. (13, 22.) In every case, the horse finds great difficulty in reaching every thing that stretches his neck downwards or upwards, his water therefore should be held to him, and his hay should be pulled for him; omission of these services greatly aggravates the sufferings of horses labouring under sore throat.

30. *Swelled Neck*. A very serious swelling sometimes follows on bleeding with a rusty or poisoned lancet, or fleam, and sometimes from causes not apparent. (126.)

The Chest.

31. *Inflammation of the lungs*, is a disease to which the horse is peculiarly liable, as we might *a priori* suspect, from the vast dimensions of his circulatory system, and the vast alteration from a natural state to which we subject him, and thereby increase his pulmonary circulation.

32. *The causes* are these deviations remote, but the immediate attack is generally brought on by sudden cold, acting on a heated surface, and thus it is that knackers, and collar makers in frosty weather expect a glut of horses that die from this disease. Hard riding is a very common cause, and high feeding also; it often commences slowly; a hard dry cough has been slightly noticed, but

occasioning no alarm for two or three days; gradually, however the cough appears to give the horse pain; he occasionally shivers and his ears and feet feel colder than the rest of his body, he heaves at the flanks, and the lining of his nose is inflamed, and his eyelids also; the appetite now becomes affected and although there is not much apparent pain, except when the horse coughs; yet there is much anxiety of countenance present. The pulse is usually small, but quick; if in this state the horse be taken out and exercised quickly, it is almost always fatal to him; it likewise happens that this complaint is sometimes mistaken for distemper, and from a fear of profuse bleeding, the only remedy that is to be depended on, is omitted, and the horse is lost. At the veterinary college, in these cases, a small dose of aloes is given every six hours, and after being bled and rowelled, the horse is turned out in the open air; and it is affirmed that many recover from this treatment. Certain it is, that the stable in which a horse is placed in this disease can hardly be too cool; but when entirely turned out, his feet and legs cannot conveniently be hand-rubbed, or bandaged up to promote circulation; neither can we blister a horse when turned out, so conveniently; and on blistering we depend as the second source of cure.

33. *The treatment* is to be commenced by attempts at lessening the action of the arterial system by early and large bleedings, as seven or eight quarts from a large horse, and which should be repeated in five or six hours if he be not relieved in his breathing. Immediately rub into the brisket, on the chest, and behind the fore legs, the blister. (*Vet. Pha.* 138, *No.* 1.) Give half a dose of physic, and assist it by mashes and warm water, which if not readily taken, horn down. Back-rake also, and throw up the laxative clyster. (*Vet. Pha.* 143.) Avoid all exercise, clothe moderately, allow a free circulation of cool air through the stable, and rub the legs frequently, and when not under this process, keep them bandaged up to the knees, with hay bands, or woollen cloths. The terminations of this complaint are various. It is not uncommon for the horse to appear better, to eat and to drink, and to excite every hope of a perfect recovery; but on some sudden exertion he falls down and expires. On examination after death, it is found that effusion of a large quantity of serous fluid has taken place in the chest.

34. *Thick wind* is another termination of pneumonia by leaving the bronchial passages charged with coagulated blood. Moderate exercise and soiling in the stable with mild mercurial physic, form the best modes of treatment, but it frequently happens that the cough resists all these and terminates in broken wind.

35. *Rearing is also a termination of pneumonia*, in which case the lungs are not affected, but congealed blood, under the name of coagulable lymph, remains in the trachea or windpipe, and obstructs the free passage of the air; by means of which the roaring noise is made. It is in vain to expect a cure: blistering the throat sometimes slightly relieves it.

36. *Chronic cough is also a termination of pneumonia*, and appears dependent on a peculiar irritability the disease leaves in the bronchial passages, which are found afterwards incapable of bearing any sudden alteration of temperature; thus horses with this kind of cough are excited to it as soon as the stable door opens, and by every exertion, by drinking, by eating, and in fact by any thing that alters the situation of the body, or is new to the part. But besides pneumonia or inflammation of the lungs producing it, it is often brought on likewise by gross feeding, which, weakening the stomach, impoverishes the blood, and thus injures the lungs which are fed by that blood. Worms also by the same means are a cause of chronic cough. It is thus that we expect to derive benefit by mediums acting on the stomach. Green food is often found useful, but particularly carrots. The hay should be excellent in quality and small in quantity; and it will be found that soiling in the stable, but particularly a course of carrots, forms a better plan of treatment than turning out. If worms be suspected, treat as under that head. [57.] Formule of chronic cough balls are seen in the *Vet. Pharm.* [148.]

37. *Broken wind is also sometimes brought on by pneumonia*, and sometimes by occult causes. It is often occasioned by over exertion after full meals, in which the lungs become permanently weakened, perhaps ruptured in their air cells. Inexperienced persons find some difficulty in detecting broken wind from other chest affections, as chronic cough, occasional colds, &c. &c.

38. *Criteria of broken wind.* The cough which accompanies broken wind, is a short, deep, hollow, grunting noise, and the short grunting expiration is peculiarly excited by turning a horse quickly round, striking him smartly with a stick at the same time, which often produces a deep sound without the cough; and which is so significant as never to be mistaken when once heard and attended to. but the principal peculiarity arises from the beating of the flanks, which operate rather by three efforts than two as usual; in the first, the air is drawn in, in the usual manner, and the flanks fill up as in common; but in the next, the falling of the flanks is

by no means natural, for it is not done by a gradual sinking of the sides, but it takes place at once, with a kind of a jerk, as though the horse were sighing; and then a third effort takes place by a more slow drawing up of the muscles of the belly and flanks, to press out the remaining air. Broken wind destroys the fecundity of the mare, and hence argues permanent alteration of structure; it is also always incurable, but horses may be rendered very useful that have it, by feeding them very nutritiously, but with food much condensed in bulk. Little hay should be allowed, and that little should be wet; water in any other way should be given but sparingly, for which they are however very greedy; from which circumstance, as well as that they are peculiarly flatulent, we learn, that the vitiation of the lungs is either aggravated by the deranged state of the digestive organs; or, which is more probable, that the digestive powers become weakened from the state of the lungs.

39. *Diseases of the belly.* Inflamed stomach seldom attacks the horse as an idiopathic affection, but it is not unfrequent for the stomach to become inflamed by mineral poison as well as rendered inert by vegetable ones.

40. *Mineral poisons inflame the stomach* acutely, and produce excessive distress, and cold sweats; the animal lies down, rolls, gets up again, looks short round to his ribs, stamps with his fore feet, and his pulse beats quick and short. When arsenic or corrosive sublimate have occasioned the malady, a viscid mucus distils from the nose and mouth, and the breath is fœtid. When copper in the form of vitriolic salts, or verdigris has been given, to the foregoing symptoms are usually added ineffectual attempts to vomit. Immediately after the poison is discovered, pour down two ounces of *sulphuretted potash*, in a quart of water; or in the absence of that, an ounce of common potash in the same quantity of water: or, when no better substitute is at hand, even strong soap suds are advisable. Mineral poisons have also another mode of acting, and are often received into the constitution, neither by design to do mischief, nor by mistake, but are purposely given as remedies.— In this way, both mercury and arsenic are frequently given for worms, glanders, farcy, &c. in daily doses, which, when even of considerable magnitude, occasion for many days no inconvenience; and at once, however, the constitution becomes fully saturated with the poison, and although before diffused throughout the blood, it now appears to return and act on the stomach to the great surprise of the owner. In these cases the symptoms are not usually so violent as in the former instance, but they are equally fatal. A

similar treatment with the one already prescribed is necessary, and as soon as the first symptoms are abated, give laxatives. In all these cases large quantities of linseed tea should be horned down, the back should be raked and clysters thrown up, blood should also be taken away plentifully. As a preventive to this latter mode of poisoning, whenever mineral agents are used, it is prudent every five or six days to stop a while, and then recommence, by which the constitution will part with the previous quantity.

41. *Salivation is also another mode of poisoning*, and though not equally injurious to the stomach, it often proves distressing, and sometimes fatal. Whenever, therefore, mercurials are given, carefully watch the gums, and as soon as they look red, and the horse quids his hay, give him a mild purge instead of his mercurial.

42. *Vegetable poisons also inflame the stomach*, but by no means in an equal degree with the mineral poisons, nor is it supposed that it is the inflammation they raise that proves destructive, but by an effect communicated through the stomach to the nervous system. *Digitalis purpurea* or foxglove, *taxus baccata* or yew, *anemone crocata* or water dropwort, *cicuta virosa* or water hemlock, *phellandrium aquaticum* or water parsley, *conium maculatum* or common hemlock, are all poisonous in a high degree to horses, and may be taken accidentally by the animal as food, or given injudiciously as medicine. *Nicotiana*, or tobacco, and the vegetable acid of vinegar, are also poisonous, and are sometimes productive of injurious consequences by over-doses, when intended as remedies. It is little known that a pint of strong vinegar has destroyed a horse. As we cannot remove the matters from the stomach, we must endeavour to neutralize their effects, by acids and demulcents, as oil, butter, &c. Thus, when narcotics have been taken, a drachm of sulphuric acid or oil of vitriol may be given in a quart of ale; or six ounces of vinegar, with six of gin, and a quart of ale, may be tried.

43. *Stomach staggers*. This peculiar complaint, which is even yet but little understood, appears dependent on a particular state of stomach, acting on particular foods; and not on what is taken in, acting on the stomach, as was supposed by Coleman, White, and others. From later communications of White, he also now appears to consider it as originating in "a particular state of stomach." Blaine appears always to have characterized it as 'a specific inflammation of the stomach.' It appears among horses of every description, and at grass as well as in the stable, and there is reason to think it epidemic, as it is prevalent in some seasons more than

in others. It may, perhaps, be regarded now and then as endemic also; under which circumstance it appears confined to low wet situations, where long marshy grass is abundant, and where noxious aquatic plants mix themselves with the grasses. When it occurs at grass, the horse is found stupidly dull, or asleep with his head resting against something. This has occasioned the disease to be called the sleepy staggers, and it has often been confounded with the phrenitis or inflammation of the brain. (8.) In the stable the horse dozes, and rests his head in the manger; he then walks up and falls to eating, which he continues to do until the distention of the stomach becomes enormous; for the peculiarity of the complaint consists in the total stop that is put to digestion, and the uneasy feel of the distension consequent to such indigestion appears to deceive the horse, and by a morbid excitement to force him to take in more. In this way he continues eating until the distention prevents the return of the blood from the head, and the animal dies apoplectic, or his stomach bursts with over-distention. More frequently, however, the stomach becomes flabby, inert, and paralytic, and after death presents marks of inflammation towards the pylorus.

44. *The treatment.* When recovery has taken place, it has occurred only when the disease has been very mild, and has been assisted by stimulating the stomach into action by purgatives, at once active and invigorating, as an ounce of aloes dissolved in a half pint of gin. When a horse of extreme value is attacked, croton oil might be tried to the amount of 20 or 25 drops in two ounces of tincture of aloes. Warm water in small quantities, or mixed with common salt should be frequently passed down. Remove every eatable, rake, clyster, and hand rub; and if the determination to the head be extreme, bleed—otherwise avoid it.

45. *Inflammation of the bowels, enteritis, or red colic,* is a very distinct disease from the gripes, gullion, or fret, with which it is, however, very apt to be confounded to the destruction of many horses. The peritoneal inflammation of the bowels, the one here treated on, is an affection of their outer covering.

46. *The causes are various.* It is not unfrequently brought on by a sudden translation of cold after great heats, as swimming during hunting, or from the removal of a horse from grass at once into heated stables, clothing and hard food; neglected gripes, or long continued costiveness, excessive riding, and the immediate drinking of cold water, have brought it on. It begins by restlessness, loss of appetite, some uneasiness; the mouth is hot and dry, the inner

membranes of the mouth, nose, and eyelids are often redder than natural. As the disease advances, the pain, before not violent, now increases so as to force the horse to lie down and rise again frequently; and when very violent, he kicks at his belly, or looks round at his sides, pawing his litter very frequently. The pulse is usually small, quick, or hard; sometimes it is more full and small, but always hard. Breathing is quickened, the extremities are alternately hot and cold, but continue longer cold than hot; and the animal is costive; sometimes pain may force away a few hardened balls of fœces, but the principal contents are retained. Blaine has given the distinguishing features between this disease and colic, under which head we have stated them.

47. *The treatment* must be active and immediate, or a fatal termination may be expected. Begin by abstracting a considerable quantity of blood; from a large horse to the amount of 7 or 8 quarts; proceed to back-rake, throw up a large clyster of warm gruel. Give by the mouth, a pint of castor oil, mixed by the means of the yolk of two eggs, with half a pint of broth or gruel. Or, give olive oil instead, following it up in half an hour by a gruel drench in which six ounces of Epsom salts have been dissolved. A sheep skin, immediately as it is removed from the sheep, may be applied to the belly, which should first be well rubbed with the stronger liquid blister. (*Vet. Pha.* 141.) In four hours repeat the bleeding, if considerable improvement have not taken place, and if the bowels be not unloaded, give more oil, and clyster frequently, having first back-raked. Avoid exercise; first hand-rub, and afterwards wrap up the extremities to the knees. As a clear passage for the dung is found, the symptoms mitigate, and the animal slowly recovers, but he must be fed at first very sparingly.

48. *Inflammation of the inner surface of the intestines* is, in some measure, different from the former, which is rather an affection of their outer covering; whereas this is usually confined to their villous surface, and may be brought on by superpurgation from over-strong physic, or from mineral acids being taken in, particularly mercurials, which often exert more influence on the bowels than on the stomach. It differs from the former in the symptoms being generally accompanied with purging; neither is there usually so much pain or uneasiness present, nor such cold extremities, but where from the violence of the inflammation these symptoms are present. Bleeding to the amount of three or four quarts is a proper preliminary, but can hardly be with propriety continued. The same stimulants to the outside of the belly should be used as in the last

disease but here clothing is recommended as well as warmth in the stable, as also hand-rubbing to keep up the circulation of the extremities. Give astringent drink (*Vet. Pha.* 131, *No. 1 or 2.*) with a pint of boiled starch every three hours, and give the same by clyster with two quarts of pot liquor, or tripe liquor, free from salt

49. *Dysenteric inflammation of the horse's bowels* is happily not very common, but now and then appears, and is then called by farriers, molten grease; they mistaking the morbid secretion from the intestines, for the fat of the body melted down and passing off thus. But dysentery is a peculiar inflammation of the mucous surface of the intestines, not contagious as in the human, nor epidemic, nor exhibiting a putrid tendency; but is peculiarly confined to a diseased increase in the mucous secretions, yet very different from simple diarrhœa, which is a mere increase in the peristaltic motion, by which the common aliments are quickly passed through the intestines, and ejected in a liquid form by an increase in their watery secretion. Whereas in the dysentery of the horse, the mucous of the intestines separates from them in large quantities; and comes away with the dung surrounding it; but when it does not pass in this way it appears in membranous films like sodden leather, or in stringy evacuations, like morsels of fat floating in water; sometimes there is a little bloody appearance. The usual symptoms of fever are always present, but not in a very high degree.

50. *The causes* are cold, over-riding, and not unfrequently acrid substances within the intestines: change of food has occasioned it.

51. *The treatment.* In the first stages bleed considerably, and give as the first internal remedy six ounces of castor oil, which will amend the fœcal evacuations considerably, afterwards administer the following; *powdered ipecacuanha, a drachm; powdered opium, a scruple; liquid arrowroot, eight ounces.* Should this not check the evacuation, and should it continue as mucous as at first, again give castor oil, and then follow it up by either of the drinks directed for the cure of scouring or looseness. (*Vet. Pha.* 131.)

52. *Diarrhœa or looseness.* This complaint originates in an increased peristaltic motion of the intestines, with an increase of their watery secretion, and is distinguished from dysentery by the purging being complete from the first, and seldom occasioning much fever or disturbance in the general health, unless exceedingly

lent. The stools are merely solutions of the aliment, and unmixed with membranous films as in dysentery or molten grease. It sometimes succeeds to over strong physic, at others the food enters into new combinations, and forms a purge. Some horses have their bowels constitutionally weak, as lank-sided small carcassed ones, where the mechanical pressure hurries the contents forwards. Salt mashes and sea water will purge horses violently sometimes. It is always proper to encourage warmth in the skin, and to change the food. The change should be generally from one more moist to one less so, as beans, &c. Barley will sometimes stop looseness; malt usually increases it. Buckwheat is often a check to habitual diarrhœa. Efficacious astringents will be found in the (*Vet. Pha.* 131.) Repeat either of these night and morning. Give but little water and that little warm.

53. *Colic, flatulent or spasmodic*, called also *gripes, fret, or gullion*, is an important, because a frequent, disease, and because it frequently destroys either quickly by its irritation, or by its degenerating into the red or inflammatory colic, when improperly treated or long continued. It is usually very sudden in its attack.

54. *The causes of colic are not always apparent*. It is sometimes occasioned by intestinal stones, which accumulate to a great size, remaining for years in the cells of the colon, until some accidental displacement occasions an interruption to the peristaltic motion. Cold in its various forms is a parent of colic; but under the form of cold water given when a horse is hot, it is most common. In some horses it is so frequent as to become a constitutional appendage.

55. *The distinguishing marks between colic and inflammation of the bowels* are gained, according to Blaine, by attending to the following circumstances. In gripes the horse has violent fits of pain, but they remit, and he has intervals of ease. The pain in red colic is more uniform and less violent. In gripes the pulse is, in general, natural; in red colic it is quicker than natural, and commonly small. The extremities are not usually cold in gripes; in red colic they usually are. In gripes, the horse attempts to roll on his back, which in red colic he seldom does. There are no marks of fever with gripes, as red eyelids, inflamed nostrils, &c. but in red colic they are always present. When the complaint has continued some hours it is always proper to bleed to prevent its ending in inflammation: bleeding in the mouth is quite useless. Back rake, and throw up clysters of warm water. one after another as

fast as possible, which often overcomes the irritation. La Fosse recommends a curious remedy, but as it can always be obtained, and has the sanction of long experience, it may be tried. An onion is pounded and mixed up with some powdered savin; in default of which, use powdered ginger. This is to be introduced up the rectum as high as possible, and the horse is to be then moved briskly about. An onion put up the fundament whole, has long been a domestic remedy. The following is recommended by Blaine: *spirit of vitriolic ether, an ounce; powdered opium, one drachm; oil of turpentine, three ounces; warm ale, a pint.* He also recommends the following more simple remedy as always at hand: *the expressed juice of two or three large onions; common gin, common oil, of each half a pint; mix and give.* White recommends a pint of brandy, or of gin, with water, as an excellent carminative. Clark, who has expressly written on gripes, extols the virtues of a mixture thus made; which, if it have the qualities he attributes to it, and which there is no reason to doubt, no agriculturalist, coach, or post master should be without it: *pimento berry, called also aaspice, ground fine, half a pound; spirits of wine, and of water, of each a pint and a half; infuse these together, and keep it for use.* Give a quarter of a pint every hour until full relief is obtained; hand-rubbing, wisping, or fomenting the bowels with hot water at the time.

56. *Inflammation of the intestines from wounds in the belly* frequently occurs; and these injuries may happen in leaping over hedges or pale gates, or may be inflicted by the horn of a cow. Sometimes the strong tendinous covering of the belly is ruptured, while the skin remains entire: the gut then protrudes and forces out the skin into a tumour. The first thing to be done is to put the gut back, taking care at the same time, otherwise extensive inflammation follows, to remove any dirt or other matter that may be sticking to it; for which purpose, should it be found necessary, it may be washed with warm water, but with nothing stronger. If the gut cannot be returned, from its being full of air, and the opening in the belly be too small to put it back again, such opening may be carefully enlarged to the necessary size. But if the animal can be thrown upon his back conveniently, a great deal may be done that cannot otherwise be accomplished; after the gut is returned, the skin only should be stitched up, and a cushion of several folds of old linen and tow being placed on the wound, it should be kept in its situation by means of a wide bandage rolled round the body, and carefully secured. The animal should then be copiously bled, and have his bowels emptied by clysters. The only food he should be allowed is grass, or bran mash, and that only in moderate

quantity. When the distention of the intestines wholly prevents their return, it would be prudent to puncture them with a very fine instrument, and thus to suffer the air to escape, which, although subjecting the horse to the risk of inflammation, is better than the certainty of death by having the intestines protruded.

57. *Worms of horses* are found, as bots, in the stomach, but which as they attach themselves to the hard insensible part of that organ seldom do harm. Clark fancifully supposes they do good, and devises means for furnishing them when not in existence. The *bot* is the larva of the *cæstrus equi*, a fly which deposits its eggs on parts of the horse himself, from whence they pass into the stomach by being licked off. Certain it is they get there, are hatched, and there remain hanging to the coats of it by two tentaculæ, receiving the juices of the masticated food as nutriment. After a considerable time they make their way out by the anus, drop on the ground, and are first transformed into the chrysalids, and afterwards into parent flies. When bots fix themselves on the sensible portion of the stomach, they may do harm; but no medicine that we know of will destroy them. The *teres* or large round worm sometimes occasions mischief, when it exists in great numbers, such as a starting coat, binding of the hide, irregular appetite, and clammy mouth. The best remedy is the *spigelia marylandica* or Indian pink, in daily doses of half an ounce. *Tænia* are not common in the horse; now and then they exist, and are best combatted by weekly doses of oil of turpentine, three ounces at a time, mixed by means of the yolk of an egg with half a pint of ale. The *ascaris* or thread worms, are best removed by mercurial purgatives. The existence of worms may be known by the appearance of a yellow matter under the tail, and by the disposition the horse has to rub his fundament. Blaine recommends the following vermifuge: *powdered arsenic, eight grains; perster or tin finely scraped; Venice turpentine, half an ounce*; make into a ball and give every morning. He also recommends salt to be given daily with the food, which agrees with our own experience as one of the best vermifuges known. It is a fact acknowledged by the residents along the sea-coast, that horses troubled with worms will often voluntarily drink largely of sea water, and thus cure themselves.

58. *The diseases of the liver are acute inflammation or hepatitis, and chronic inflammation or yellows.* *Hepatitis* is the acute inflammation of this organ, which like the lungs, stomach, and intestines, may spontaneously take on the affection. The symptoms are not unlike those which attend red colic, but with less violence. **U n**

be not however arrested, the termination will be equally fatal. About the third day the whites of the eyes turn yellow and the mouth also. Bleeding, blistering, and purgatives form the method of cure as practised in red colic.

59. *Chronic inflammation or yellows.* The liver of horses is less complex than that of any other animals, and is therefore not very liable to disease; indeed some authors affirm that the horse is never affected with jaundice, but that the yellowness of skin is a mere stomach affection: this is, however, erroneous, and not only does the liver become hardened and thickened occasionally, but the bile becomes diseased, and is thrown out in that state by the blood over the body. If fever be present, bleed, but if the symptoms present no token of active inflammation, give each night, ten grains of calomel, and every ten days, work it off with a mild dose of physic. It is, however, necessary to remark; that it is not every yellowness of the skin that betokens either an acute or chronic inflammation of the liver. It is the property of every serious inflammation of any of the important organs of the chest and belly, to communicate a portion of the evil to the other organs immediately in conjunction with the liver: thus an affection of the stomach or intestines, of the inflammatory kind, very often occasions redness of the membranes of the nose, eyelids, &c. &c.

60. *Diseases of the urinary organs.* Inflammation of the kidneys, is an idiopathic affection, not one of frequent occurrence; but as brought on by injuries, such as over-riding, heavy loads, or violent diuretics, it is not unfrequent: when idiopathic, it may be the effect either of cold, heating food, or a translation of some other inflammation, in which cases it comes on suddenly, and assumes the same febrile appearances that other intestine inflammations produce; but there is not often great apparent pain, but a frequent inclination to stale, the quantity made being so small as almost to amount to a stoppage of urine, which is less or more complete as one or both kidneys are affected. What little urine is made, is also at first very thick, and then bloody. When the disease is the effect of external injury, the urine is not so scanty, but is more bloody; and this symptom precedes the other. There is usually much pain and stiffness about the loins, and we learn from Blaine, that a swelling and a paralytic affection of the hind leg of the side of the affected kidney, sometimes is a feature in the complaint. To distinguish this inflammation from that of the neck or body of the bladder, with which it may be confounded, the same author recommends that the hand be passed up the rectum, when if the affection belong

to the kidneys. the bladder, whether full or empty, will not be hotter than usual; but the contrary occurs when any part of the bladder is the seat of the disease.

61. *The treatment* must be active, and in most respects similar to what has been recommended for red colic, as regards bleeding, emptying the bowels, and endeavouring to lessen the arterial action by bleeding; but here we must carefully abstain from irritating the kidneys by diuretics internally, or blisters externally. A newly stripped sheep skin placed over the loins, or active fomentations of hot water, are the only sources of counter irritation that are proper neither should diluting liquors be pressed, on account of the distention they occasion, but no evil can arise from clystering.

62. *Inflammation of the bladder.* When the body of the bladder becomes inflamed, there is frequent staling from the very first attack; but when the neck of the bladder is the seat of the evil, the squeezing out of a few drops will only take place when the bladder has become filled, which may be known by passing the hand up the rectum. The treatment will be alike in both cases, and is the same as recommended for the last affection. It must be evident, that warm, mild, and frequent clystering, must here be peculiarly advisable.

63. *Stranguary or suppression of urine; incontinence of urine; bloody urine.* Stranguary may arise from an injury done to the kidneys, or to the bladder, by strains, or by the absorption of irritating matters. In these cases, bleed if there be fever, and if not merely give the horse absolute rest; mash him, give gruel, and warm his water for drink. *Bloody urine* should be treated in the same way; some horses have such a natural or acquired weakness of the kidneys, as to stale blood with their urine on every occasion of over exertion: the means frequently used for relief, are such as aggravate the complaint, and indeed are often the occasion of it, which are diuretics. Strong diuretics injure horses more than strong physic, and benefit them less than any other of the popular means made use of. In retentions of urine, but particularly in cases of bloody urine, they are absolutely improper.

64. *Diabetes, profuse staling, or pissing evil.* This disease is more frequently forced on the horse, by long continued diuretics, or from a similar effect brought on by kiln-dried oats, mow-burnt hay, or some green vegetables, than acquired from constitutional indisposition. The horse first stales often, and profusely, he then becomes weak and faint, and sweats on any exertion. If it be at all

constitutional, his hide is bound from the beginning, and his urine will have a sweet taste; but if his appetite were good and his coat sleek, bright, and elastic, when the urine was first observed to be immoderate, the evil arises from some fault in the feeding, clothing, exercise, or other management of the horse. Examine into these matters, particularly into the food, and next the water. Inquire whether diuretics have been given, under an erroneous supposition of increasing the condition, and alter what may be amiss. If this do not remove the complaint, try the following, after Blaine's directions: *liver of sulphur, two drachms; ura ursi, four drachms; oak bark, one ounce; catechu, half an ounce; alum, half a drachm; give as a daily drink in a pint of water.*

65. *Stone or gravel.* Calculous concretions are not uncommon in the large intestines of horses, where they grow sometimes to an enormous size, lodged in one of the cells usually, and where they occasion but little inconvenience, except a displacement occurs, when serious evils, as colic, inflammation, or total stoppage, follow. In the bladder, stone is very seldom found; and there is reason to believe, that though gravel is a common term in the farrier's list, that it seldom if ever occurs; injuries of the kidneys and bladder being usually mistaken for it.

Diseases of the Skin.

66. *Mange is a contagious disease,* not uncommon among low bred and badly kept horses, but which is seldom generated in those properly managed. When it is the effect of impoverished blood, a different course of feeding must be substituted, not heating, but cooling, though generous; as carrots, speared oats, malt mashes, stable soiling, &c. When it arises in full fed horses, bleed twice, lower the feeding, substituting for corn, soiling, carrots, or bran mashes. Give a nightly alterative, (*Vet. Pharm.* 129, *No. 1 or 2*) and dress with either of the mange dressings. (*Vet. Pharm.* 171.) After a cure has been effected, carefully clean all the apartments with soap and water.

67. *Surfeit will now and then degenerate into mange,* but more generally it is brought on by a fulness of habit, acted on by sudden transitions from cold to heat, or heat to cold: it is likewise not unfrequently the consequence of over-fatigue. If it show a disposition to spread, and the skin become scaly and scurfy, treat as under mange, otherwise treat as directed under want of condition. (4)

68. *Warbles* are of the nature of surfeit in many instances, in others they are brought on by the pressure of the saddle, which

either suppurate and burst, or become indolent and remain under the name of *sitfasts*. In the early state, bathe them with chamber-ley or vinegar: If they proceed to suppuration, refrain, and when they neither go back or come forward, put on a pitch plaster, and if this do not promote suppuration, let the sitfast be dissected out.

69. *Warts are common to old horses*, and had better be put up with unless they be situated in some very inconvenient or conspicuous part. In this case tie a thread tightly around the root, and the wart will drop off, or it may be cut off. Blaine recommends the following, when warts are too numerous to be removed: *crude sal ammoniac, two drachms; powdered savin, one ounce; lard, an ounce and a half.*

70. *Hide bound is a state of the skin*, where the interstitial matter between that and the fleshy pannicle is not in a state to allow of its pliancy and elasticity. The binding down of the hide thus closely, acts on the hair, which it protrudes in a contrary direction to its naturally inclined position; and thus a staring coat usually accompanies hide binding. In considering the subject of condition (4) we have seen that it is not a disease of itself, but is in every instance a symptom only.

Glanders and Farcy.

71. *The glanders is the opprobrium medicorum*, for hitherto no attempts have succeeded in the cure of more than a few cases. By some peculiar anomaly in the constitution of the horse, although conclusive proofs are not wanting that this and farcy are modifications of one disease, and can each generate the other; yet the one is incurable, while the other is cured every day. When glanders has been cured, the time and labour necessary to accomplish the end has swallowed up the value of the horse; and has also, in many supposed instances of cure, left the animal liable to future attacks which have occurred. The experiments on glanders, pursued at the veterinary college and by White of Exeter, have thrown great light on the disease itself, its causes, connexions, and consequences; but have done little more. From these we are led to conclude, that glanders will produce farcy, and that farcy can produce glanders. That glanders is highly infectious, and that each infection may be received by the stomach, or by the skin when it is at all abraded or sore: and it is also probable that it is received by the noses of horses being rubbed against each other. White's experiments go to prove that the air of a glandered stable is not

infectious; but this matter is by no means certain, and should not be depended on without a greater body of evidence.

72. *The marks of glanders* are a discharge of purulent matter from ulcers situated in one or both nostrils, more often from the left than the right. This discharge soon becomes glairy, thick, and white-of-egg-like: it afterwards shows bloody streaks, and is fœtid. The glands of the jaw of the affected side, called the kernels, swell from an absorption of the virus or poison, and as they exist or do not exist, or as they adhere to the bone or are detached from it, so some prognosis is vainly attempted by farriers, with regard to the disease; for in some few cases these glands are not at all affected, and in a great many they are not bound down by the affection of the jaw. As there are many diseases which excite a secretion of matter from the nose, and which is kept up a considerable time; so it is not always easy to detect glanders in its early stages. Strangles and violent colds, keep up a discharge from the nostrils for weeks sometimes. In such cases a criterion may be drawn from the existence of ulceration within the nose, whenever the disease has become confirmed. These glanderous chancres are to be seen on opening the nostril a little way up the cavity, sometimes immediately opposed to the opening of the nostril; but a solitary chancre should not determine the judgment. The health often continues good, and sometimes the condition also, until hectic takes place from absorption, and the lungs participate, when death soon closes the scene.

73. *The treatment of glanders*, it has been already stated, is so uncertain that it is hardly worth the attempt; however, when the extreme value of the horse or the love of experiment leads to it, it may be regarded as fixed by experience, that nothing but a long course of internal remedies, drawn from the mineral acids, can effect it. These have been tried in their endless variety: White recommends the mildest preparations of mercury, *æthiops mineral*; under the conviction that the more acrid preparations disturb the powers of the constitution so much, as to destroy as effectually as the disease. At the veterinary college the *sulphate of copper* (blue vitriol) has been long in use. Others have used the *sulphates of iron and zinc*. Clark recommends the daily administration of a drink or ball, composed of the following ingredients: *sulphate of zinc*, 15 grains; *powdered cantharides*, 7 grains; *powdered allspice*, 15 grains; of which he gives one or two extraordinary proofs of utility.

74. *The farcy is a disease more easily cured than the glanders* of which our daily experience convinces us; farcy, or farcin attacks

under distinct forms, one of which affects the lymphatics of the skin and is called the *bud or button farcy*; the other is principally confined to the hind legs, which it affects by large indurations, attended with heat and tenderness. A mere dropsical accumulation of water in the legs sometimes receives the name of *water farcy*; but this has no connexion whatever with the true disease in question: farcy is very contagious, and is gained from either the matter of farcy or from that of glanders.

75. *Treatment of farcy.* The distended lymphatics or buds may often be traced to one sore, which was the originally inoculated part, and in these cases the destruction of this sore, and that of all the farciated buds, will frequently at once cure the disease, which is here purely local. But when the disease has proceeded further, the virus must be destroyed through the medium of the stomach; although even in these cases, the cure is rendered more speedy and certain, destroying all the diseased buds, by caustic or by cautery. Perhaps no mode is better than the dividing them with a sharp firing iron; or if deeper seated, by opening each with a lancet, and touching the inner surface with *lapis infernalis*. The various mineral acids may any of them be tried as internal remedies with confidence; even losing sight of the necessity of watching their effects narrowly, and as soon as any derangement of the health appears, to desist from their use; *oxmuriate of quicksilver* (corrosive sublimate) may be given in daily doses of fifteen grains; *oxide of arsenic* may also be given in similar doses. The *subacetate of copper* (verdigris) may also be tried, often with great advantage, in doses of a drachm daily. Blaine joins these preparations, and strongly recommends the following: *oxmuriate of quicksilver, oxide of arsenic, subacetate of copper, of each eight grains; sublimate of copper, one scruple*; make into a ball and give every morning, carefully watching the effects, and if it be found to occasion distress, divide, and give half, night and morning. The same author professes to have received great benefit from the use of the following: *expressed juice of clevers, or goose-grass, a strong decoction of hempseed and sassafras, of each six ounces*; to be given after the ball. It remains to say, that whatever treatment is pursued will be rendered doubly efficacious if green meat be procured, and the horse be fed wholly on it, provided the bowels will bear such food; but if the medicines gripe, by being joined with green food, add to the diet bean-meal. When green meat cannot be procured, carrots usually can; and when they cannot, still potatoes may be boiled, or the oats may be speared or malted. As a proof of the beneficial effects of green meat, a horse, so bad with farcy as to be entirely despaired of, was drawn

into a field of tares, and nothing more was done to him, nor further notice taken of him, although so ill as to be unable to rise from the ground when drawn there. By the time he had eaten all the tares within his reach, he was enabled to struggle for more; and finally he rose to extend his reach, and perfectly recovered.

Diseases of the Extremities.

76. *Shoulder strains*, are very rare; most of the lameness attributed to the shoulder belong to other parts, and particularly to the feet. Out of one hundred and twenty cases of lameness before, Blaine found that three only arose from ligamentary or muscular extension of the shoulder, or rather of the abductor and sustaining muscles: when shoulder strain does happen, it is commonly the consequence of some slip, by which the arm is forced violently forwards. It is less to be wondered at than at first seems probable, that farriers mistake foot lameness for shoulder strains, when we reflect that a contracted foot occasions inaction, and favouring of the limb; which thus wastes the muscles of the shoulder. Seeing that one shoulder is smaller than the other, the evil is attributed to that, and it is pegged, blistered, swam, and fired, to the torture of the animal and the increase of the foot's contraction by the confinement. In real shoulder strains, the toe is dragged along the ground while in motion; at rest it is planted forward, but resting on the point of the toe. When the lameness is in the foot, the horse points his foot forward also, but he does so with the whole limb unbent, and the foot flat. These differences are highly necessary to be attended to, as well as the peculiar difficulty there is in moving down hill, which he does with reluctance, and by swinging his leg round to avoid flexing it. This lameness may be further brought to the test by lifting up the fore leg considerably, which

if the evil be in the shoulder, will give evident pain. The muscles between the fore legs are likewise tumified and tender in these cases.

77. *The treatment* consists, when it is recent, in bleeding in the plate vein, rowelling in the chest, and fomenting with hot water two or three times a day. When the heat and tenderness have subsided, first bathe daily with the astringent wash for strains (*Vet. Pha.* 134, No. 1) for a week; and afterwards, if necessary, proceed to blister in the usual manner.

78. *Strain in the whirl bone.* This important joint is sometimes strained, or its ligaments and muscles unnaturally extended, from a greater force being applied to them than their structure is able to bear, or their power to resist; a læsion takes place of some of their fibrillæ, or in lesser injuries their elasticity is injured by being put on the stretch beyond their power of returning. In all such cases, the parts react, and inflammation follows; by which heat, tenderness, and swelling ensue.

79. *Treatment.* The first indication is the same in this as in all ligamentary strains, which is to moderate the inflammation by fomentations, &c. &c., and when that has subsided, to endeavour by astringents and bracers to restore the tone of the parts; after which, if any swelling remains, from the extravasated blood becoming organised, to promote its absorptions by mercurial frictions, and blistering. This applies to all strains, and will direct the treatment therefore of that of strain in the articulation of the thigh with the body also.

80. *Strain in the stifle,* is treated in the same manner.

81. *Strain or clap in the back sinews.* This is generally an injury done to the sheaths of the tendons, or of the ligaments which bind them down. In very aggravated cases, it sometimes occurs that even the tendons themselves are extended beyond their capacity. The heat, swelling, and tenderness, are first to be combatted by fomentations, and if this be extreme, bleed also, and give a dose of physic. Next proceed to poultice with saturnine applications, until the heat and swelling are reduced: then use tonics, *astringent wash*, (*Vet. Pha.* 134, No. 1 or 2,) bandage and exercise very carefully. If swelling remain after heat, pain, and lameness are past; or when lameness only remains, after all heat is gone, proceed to blister mildly twice. In all cases of ligamentary extension

when the heat has subsided, the part may be considered as in a state of atony; and bandages judiciously applied are then proper, particularly during the day.

82. *Rupture of the tendons and ligaments of the leg.* It is very seldom that the tendons themselves are ruptured, but the suspensory ligaments are more often so, and the evil is called breaking down. It is usually very sudden, and the fetlock is brought almost to the ground. A perfect cure is seldom obtained; but the inflammation should be moderated by the means already described, and the heels should be raised. A laced stocking or firm bandage, when the inflammation has subsided, is necessary; and firing is often prudent as a permanent bandage.

83. *Strains of the ligaments of the fetlock and coffin joints* often occur, and may always be distinguished by the heat, tenderness, and swelling. Treat as already described. In all strains of the leg, attended with inflammation, a goulard poultice is a convenient and useful application. The goulard water should be mixed with bran, and a worsted stocking being drawn over the foot, and up the leg, it is first tied around the foot; the poultice is then put in, and the stocking fastened around the leg above the injury (115.)

84. *Mallenders and sallenders* are scurfy, scabby eruptions, affecting the back of the knee, and ply to the hock; common only in coarse, low bred, and in cart horses. Wash with soft soap every day, after which anoint with an unguent formed of equal parts of mercurial ointment, tar, and Turner's cerate.

85. *Broken Knees.* The usual cases of broken knees are referable to wounds in general; and the treatment of them in no wise differs therefrom, with this caution, that here it is more immediately necessary, both for appearance and safety, that if any flap of skin hang apart, to cut it off, or the wound will heal with rugosed edges. But when the joint of the knee is broken into by the violence of the injury, it becomes of a very different nature, and is known first by the extreme lameness and swelling that occur; and next by the escape of a slippery mucus not unlike the white of an egg. If this continue to escape, violent inflammation follows, and either the horse or the joint are lost by it. Farriers are apt to attempt to stop the flow of the *joint oil*, as it is called, by oil of vitriol, or other escharotics, which treatment is usually followed by the most disastrous consequences. It is however, necessary to stop the immediate flow, by other means the best of which is by a fine budding-iron

heated. Should the laceration be considerable, this cannot be done ; but the treatment must then consist of saturnine poultices, bleeding low diet, and the other anti-febrile remedies, until the swelling has subsided, when apply the astringent paste recommended by Clarke, made of pipe clay and alum, every day, but by no means introduce any escharotics. On the subject of broken knees, a prejudice prevails, that a horse that has once broken his knees, is more liable to fall again than a horse that has not before fallen down ; but unless the knee be injured so as to become stiff by such accident, the supposition is wholly erroneous. Horses fall as often by treading on sharp stones when they have corns, as they do by stumbling ; and as corns sometimes come on rapidly by pressure, so such a horse becomes afterwards liable to trip, and this gives rise to the opinion formed, that when once he has been down he will ever after be liable to it.

86. *Splints and bone spavin.* The former are usually situated on the inner side of the canon or shank before—and as they are situated, so they are more or less injurious. When buried, as it were, within the tendons or back sinews, they are very apt to lame the horse seriously ; but when situated on the plain bone, unless they are very large, they seldom do much injury. If a splint be early attended to, it is seldom difficult to remove. Blaine recommends the swelling to be rubbed night and morning for five or six days, with a drachm of mercurial ointment, rubbing it well in ; after which to apply a blister, and at the end of a fortnight or three weeks to apply another. In very bad cases he recommends firing in the lozenge form.

87. *Bone spavin* is an exostosis of the hock bones, the treatment of which in no wise differs from that of splint ; except that as a spavin in general is more injurious than a splint, so it is more necessary to commence the treatment early, and to continue it energetically. It also unfortunately happens, that from the complexity of structure on the hock, spavin is not so easily removed as splint, and more usually requires the application of firing.

88. *Ring bone* is of the same nature, being an exostosis or bony circle, formed around the coronet, the treatment of which is the same with splint and spavin.

89. *Blood spavin, bog spavin, and thoroughpin,* are all of them originally of the nature of wine galls, and are nothing more than enlargements of the brusal capules described in the anatomy as surrounding tendons, ligaments, and bones, to furnish them with

the lubricating medium. By over exertion or hard work these bursal bags become extended, and their contents increased, and distended into puffy swellings in the hock, called, when on the ply, bog spavin. The pressure of this sometimes occasions a varicose state of the superficial vein, which passes directly over it on the inner side of the hock, and which enlargement then receives the name of blood spavin. When the bursal enlargement extends through the hock, it is called thoroughpin. When it is situated below in the bursæ of the flexor tendons, near the fetlock joint, it receives the name of wind gall.

90. *The treatment* in all these cases must be similar in principle, and consists in lessening the distended sac—not as was formerly practised to the destruction of the horse often, by letting out the contents of these wind galls; but by strengthening the sides of the tumours by stimulants or by pressure. The more active stimulants are the liquid blister, (*Vet. Pharm.* 141,) milder ones are found in the astringent wash. (*Vet. Pha.* 134, No. 1.) Bandages assist greatly, when well applied to the part, and in desperate cases firing has been resorted to, which is nothing more than a more violent stimulant and a more permanent bandage.

91. *Capulet* is a bursal enlargement of the point of the hock, and is to be treated by friction, astringents and bandage.

92. *Curb* is an inflammation of the ligaments at the back of the hock, and is usually removed by astringents. (*Vet. Pha.* 134.) When it does not give way to these, the sweating liquid blister may be applied. (*Vet. Pha.* 142.)

93. *Cracks and grease* may be considered as modifications of one and the same affection, and are commonly brought on by some neglect in all horses; but when they occur in any but the thick-heeled low bred animals, they are invariably so. Over feeding or under feeding, but much more frequently the former, will bring it on. A very frequent cause of it is the practice of washing the legs of horses and suffering them to dry of themselves. In every case without exception, washing the legs should be avoided, unless they be rubbed perfectly dry afterwards. When horses have long hairs about their heels, and are washed and then left wet, the evil must be doubled; as the evaporation going on, cools and chills the heels, and thus produces a species of chilblain; and we well know how difficult these are to heal when broken. Cracks in the heels very often occur in horses removed too suddenly into full keep from previous straw or grass or from these to a hot stable; which by the heat

and moisture of the litter, occasions a determination of blood, and humours to the legs, and they break out into cracks or scabs, from which issue a bloody ichor, or a more thick matter. Between the sores the hair staves and gets pen feathered, and the horse finds difficulty and pain in moving.

94. *The treatment* must depend on the state in which the animal is at the present. If there be reason to suspect the horse to be full and foul, bleed, lower his food, soil him in the stable; or mash and give him a mild dose of physic. But when some mismanagement is the sole cause, remove that, and if the case be a severe one, by means of an old stocking drawn over the foot, bury the whole heel in a poultice, made of scraped carrots or turnips; which will subdue the irritation and bring the parts into a state to bear the application of the astringent paste, (*Vet. Pha.* 136, *No.* 2,) or if more convenient, of the astringent wash, (*Vet. Pha.* 134, *No.* 1 or 2.) Moderate exercise should be continued, and the heels carefully cleaned from dirt by soft soap and water on each return therefrom; after which, always again apply the astringent.

95. *Grease* is nothing more than an aggravated state of the same affection, and is more common to the hind than the fore legs. Coarse fleshy legged horses are peculiarly prone to the affection from the great accumulation that takes place in their legs; and from the difficulty that the capillaries find in carrying the increased quantity of lymph upwards. In these, long stable confinement should be avoided, and when that is impossible, it should be counteracted by exercise frequently and judiciously administered. Many cart horses never go out but to work; they often work three days incessantly, or nearly so; and they perhaps rest two days entirely. Can it be wondered at, that the change occasions swelling, acting on the weakness and exhaustion of previous fatigue, and could not this be avoided by turning out for an hour, or walking for half an hour night and morning? stable soiling should be used; bleeding and physicking also in very bad cases; and when the inflammation and irritation or soreness are great, the poultices recommended for cracks, should be applied until these circumstances are removed; when commence the use of some of the astringents recommended (*Vet. Pharm.* 134.) White has stated two remarkable cases of grease cured by the application of corrosive sublimate in the form of a wash, as of two drachms of sublimate to ten ounces of water; increasing it to three drachms if the pain occasioned by the first be not too considerable. Blaine says that the clivers or goose grass has been known to be of great service in bad cases of grease—half

a pint of the expressed juice to be given daily as a drink, and a poultice of the herb to be applied to the heels. In some cases of long standing when the running has ceased, a thickened state of the limb remains; which is best removed by firing, and which likewise is a preventive to a return.

Diseases of the Feet.

96. *Founder of the feet is of two kinds, an acute and a chronic* *Acute founder* is a disease that, until lately, was less understood than almost any other. After a very severe day's work, or when very much heated, if a horse get a sudden chill by standing in snow or cold water, it is not uncommon for him to be seized with universal stiffness, and every symptom of great fever. Such a horse is said to be *body foundered*. By degrees, however, it is observed that the animal has an extreme disinclination to remain on his feet; from whence it will appear that the whole of them are affected, when the horse draws his hind feet under him, his fore only are affected, and when he draws his fore feet under him his hinder feet are the seat of the complaint; but which is seldom the case. On feeling the feet they will be found intensely hot, and the pastern arteries beat with great violence. After a few days, unless the disease abate, a separation of the hoofs from the coronet takes place, and at last they fall entirely off.

97. *The treatment.* At the commencement of the disease bleed largely, as well by the neck as from the toe of each affected foot, by paring, until the blood flows freely. After which immerse each foot in a goulard poultice (115,) give the fever powder or drink, (*Vet. Pha.* 157 & 158,) litter up to the belly; and if amendment do not take place, renew the bleedings, and blister round the pasterns.

98. *Chronic founder, contraction or fever in the feet.* The artificial life that horses lead, subjects them to many diseases; one of the principal of which is that of contracted feet. Blaine considers a neglect of sufficient paring of the hoof, the application of artificial heat from hot stables, and hot litter, the deprivation of natural moisture, constitutional liability, and the existence of thrushes, as among the principal causes of this evil. It is more common among blood horses, than to others, and he observes, that dark chesnuts are of all others most prone to it.

99 *The treatment of contraction in the feet.* It is better to prevent, than to be under the necessity of attempting to cure the evil.

Prevention may be practised by avoiding the acting causes. As soon as at all suspected to be likely to occur; keep the hoofs pared low; never suffer the horse to stand on litter, nor allow the stable to be too hot; feed moderately, and never allow the horse to go without daily exercise; whatever increases the general fulness of habit flies to the feet. Above all, keep the feet moist by means of wet cloths tied closely around the coronet, falling over the whole hoof, but not extending beyond the edge. Then moisten repeatedly, and stop the feet (166) every night. When contraction has already taken place, many plans have been recommended; as jointed shoes, by Coleman, Clark, and others, but it is not found that mechanical expansion in this way produces permanent benefit. The most effectual mode is to obviate all previous causes of contraction; and then to thin the hoofs around the heels from each quarter so thin as to be able to produce an impression by means of the thumb; in fact, to remove so much of the horn as is consistent with safety, from the coronet downwards. It is also prudent to put in a score or two from above downwards, drawn a quarter of an inch deep, on each side towards the front of the hoof; but whether this be done or not, the front of the hoof should be rasped thin about an inch in width; by which means a hinge is formed, which operates most advantageously in opening the heels. After this is done, tips should be put on, and the horse should be turned out to grass, where he should remain three months, by which time the new formed heels will have reached the ground, and will bear a shoe.

100. *The puniced foot* is a very common consequence of acute founder, in which the elasticity of the laminae becoming destroyed the support of the coffin bone is removed, and it rests wholly on the sole, which it gradually sinks from a concave to a convex surface, drawing with it the front of the hoof inwards. In weak, broad heavy feet, this evil comes on sometimes without founder, the treatment can only be palliative, a wide webbed shoe exactly fitted to the foot, without at all pressing on it, prevents the lameness consequent to the disease, a shoe exactly the contrary to this has been tried in some cases with benefit, the form of which has been one with a web so narrow as only to cover the crust, but so thick as to remove the feet from accidental pressure. In other cases, no shoe answers so well as a strong bar shoe.

101. *Corns* are most troublesome ailments, to which horses are very liable, and which injure and ruin thousands; they are wholly accidental; no horse having any peculiar tendency to them, but being always brought on them by some improper pressure, usually

of the shoe or from something getting between the shoe and the horny heel. A shoe too long worn is a very common cause, and a still more frequent one is the clubbing the heels of the shoe; neither is it necessary to the production of corns that the shoe itself should press on the sole; but they are equally produced when the outer horn of the heels or of the bars, is the immediate offending part rendered so by too luxuriant growth, by unequal wear, or by secondary pressure from the shoe, or by gravel working in. It is the fleshy sole itself that is bruised, from which a speck of extravasated blood follows, and if not immediately relieved it gathers, or the part becomes habitually defective, and instead of forming healthy horn, it always afterwards forms a spongy substance of extreme sensibility, and thus always is liable to produce pain and lameness when exposed to pressure.

102. *The treatment of corns* is seldom difficult or unsuccessful at their first appearance, but afterwards it can be only palliative. Blaine directs that by means of a fine drawing knife every portion of diseased horn should be pared away, and the extravasation underneath likewise. Having done this, he advises to introduce some *butter of antimony* into the opening, to place over this some tow, which should be kept in its place by means of a splint. If any contraction of the heels be present it will materially assist the cure to lower them, and to cinch the hoof a little around the quarters, and afterwards to put on a shoe without heels opposed to the corn, or a shoe chambered opposite the weak part: or a bar shoe may be applied so framed as completely to leave the heel untouched. Introduce the butter of antimony once or twice more, with the interval of two days between, and then turn the horse out to grass; in about six weeks time the foot will be sound. The treatment of corns, when of long standing, does not materially differ: for although they are never wholly eradicated, they may be rendered but little troublesome. The diseased part must be carefully pared out at each shoeing, and such a shoe put on as will completely free the heel from pressure.

103. *Running thrush* is always a dangerous disease, and few errors in horse management are more glaring than the common one of supposing they are necessary to carry off humours. If less food, more exercise, cool stables, and dry standings, were substituted to correct the fulness, instead of thrushes, which invariably contract the feet whenever they continue any length of time, it would save many valuable horses. To the cure, begin by cleaning out all the *discharges* of the frog from loose ragged horn, and then introduce to

the bottom of the sinuses, by means of a thin piece of wood, some of the thrush paste (*Vet. Pharm.* 133,) smeared on tow, which will enable it to be held within the cleft, especially if it be guarded by splints of wood passed under the shoe; renew the dressing daily; turning out to grass may be practised to great advantage for thrushes by this mode of dressing.

104. *Sand cracks are fissures in the hoofs*, commonly of those before, and usually towards the inner, but now and then towards the outer quarter also, from above downwards: from the crack, a little oozing of blood or moisture is seen; and the sensible parts underneath getting between the edges of horn, being pressed on, lame the horse. White recommends to fire the fissure crossways, so as to destroy the connection between the divided and undivided parts of the hoof.

105. *Pricks or punctures of the feet* are often very serious evils, either when received by nails in shoeing, or by one picked up in the road, &c. The danger arises from inflammation, which is always great from any injury done to the sensible and vascular parts within the foot. This inflammation quickly proceeds to suppuration; and the matter is apt to make its way upwards, unless it find a ready vent below. When it does not break out at the coronet, it will often penetrate under the sole, and finally disease the bones, ligaments, or cartilages, and produce quittor. It is very seldom that a horse is pricked in shoeing, but that the smith is aware of it by the peculiarity of the feel on the hammer, and by the flinching of the animal. At such times were he to immediately draw the nail a little, enlarge the opening, and introduce some spirit within the puncture, nothing would occur; but on the contrary, he sends the horse home to avoid trouble, who, the next, or following day, is found lame, with his foot hot, if the nail be not driven too near the sensible laminae, it will only require to be removed to free the horse from his evil; but if it have been driven through, and have wounded them, then suppuration ensues, and on examining the foot by the pincers when the shoe is removed, he will flinch at the pressure on the diseased part. It is probable, on the removal of the shoe that matter will at once flow out at the immediate nail hole, if not, the drawing knife will soon detect the injury. If the heat be great, and instead of matter, bloody dark ichor flows out, wrap the foot up in a poultice; but if healthy matter flows out this will not be necessary, sometimes it is requisite to detach all the horn that is under-run by the matter. But when the injury has not proceeded to this extent, apply over the part a pledget of tow steeped in friar's balsam; tack

on the shoe lightly, and retain the dressing by means of *splints*, which are thin pieces of wood passed under the shoe; repeat the dressing daily, and avoid moisture, which would encourage quittor. A nail picked up on the road, and which passes through the sole below or through the frog, is to be treated in the same manner, and also when the matter breaks out at the coronet; but when a nail is picked up and penetrates the coffin joint, which is known by the synovia or joint oil appearing, such opening should be immediately stopped by paring towards the wounded joint, and then applying a heated budding-iron, not to the capsular ligament itself, but to the skin immediately near it; if this be inconvenient, put a pledget dipped in a little butter of antimony, just within the opening, but do not press it into the cavity of the joint: if this be insufficient to stop the flow, but more particularly if the original wound be penetrated to the bone, it is probable that the bone itself will become in some measure diseased, which is known by the rough grating felt at the point of the probe when passed. In this case, enlarge the opening so as to be able to scrape the diseased bone away. *Bruises of the sole*, from whatever cause, will all fall under some of these points of view, according as the case may be.

106. *Quittor and canker are the consequences of these injuries*, when neglected, or originally extensive. In these cases either the bones, ligaments, or cartilages, or all, become diseased; and a cure can only be obtained by removing the diseased parts by the knife or by caustic.

107. *Treads, over-reach, &c.* A wound on the coronet is not uncommon from one foot being placed on the other; or the hinder foot may strike it, &c. First wipe away the dirt, and remove any loose edges that cannot unite; avoid washing, unless stones and dirt are suspected to be within, and bind up, having first placed over the wound a pledget of lint or tow moistened with balsamic tincture, or tincture of myrrh, or of aloes &c. *Over-reaching*, or *over-stepping*, is often an injury done to the fetlock joint before, by the hinder foot, or to the back sinew higher up. Sometimes it is simply a violent bruise, at others the laceration is extensive, in which case treat as a tread; and when no laceration has taken place treat as a bruise or strain.

108. *Cutting* is a defect to which some horses are liable from their form, as when they turn their toes out, or have bent legs. Others cut only when they are lean, which brings their legs nearer together. Weak horses cut because they cross their legs when

fatigued, and young unfurnished horses cut at youthful periods and grow out of it afterwards. The part in which a foot interferes with the opposed limb is very different. When it strikes the shank high up it is called *speedy-cut*, and is best remedied by wearing knee boots or rollers. When it is at the fetlock the cutting is at the side, or rather backward, according to circumstances. Some horses cut by the side of the shoe, others by the hoof at the quarters; and some by the point of the heels. It is to be remarked, that it is better to put up with the evil of cutting, than to do as is too frequently done, which is, to pare away the hoof until it excites contraction. The shoe may be feather edged, or may be set a little within the cutting quarter; but by no means alter the size or form of the hoofs themselves, and particularly avoid taking liberties of this kind with the fore feet. Boots or rollers, are but little trouble to put on, and when not buckled too tight never injure: whereas to allow a horse to continue to cut produces a callus, and often throws the animal down.



VETERINARY OPERATIONS.

109. The general practises to be here enumerated are chiefly the treatment of wounds, the application of fomentations, setons, blisters, clysters, and physicking, and the operation of castrating, nicking, bleeding, &c

Treatment of Wounds.

110. A wound must be treated in some measure according to the part of the horse's body in which it happens: but there are some principles to be observed alike in all horse surgery. There are likewise a few, which, as they differ from the principles of human surgery, should be first noticed, and which should guide the practice of those who might be misled by analogy. The wounds of horses, however carefully brought together and confined in their situation, as well as shut out from the stimulus of the external air are seldom disposed to unite at once, or as it is called in surgical language, by the *first intention*. It is always, therefore, necessary to expect the suppurative process; but as the adhesive inflammation

does now and then occur, we should never wash with water or other liquids a mere laceration, if no foreign matter, as dirt, &c. be suspected to be lodged within it, still less should we stuff it with candle or tents of any kind. On the contrary, it should be carefully and smoothly brought together, and simply bound up in its own blood; and if it do not wholly unite at once, and by the first intention, perhaps some portion of it may; and at all events, its future progress will be more natural, and the disfiguration less than when stuffed with tents, tow, &c. or irritated with heating oils or spirits. When an extensively lacerated wound takes place it is common, and it is often necessary to insert sutures, or stitches, into the lips of the wound: and here we have to notice another considerable variation from the principles of human inflammation, which is, that these stitches in the horse, ox, and dog, soon ulcerate out, seldom remaining longer than the third or fourth day at farthest. It therefore is the more necessary to be careful, that by perfect rest, and the appropriation of good bandages we secure the wound from distortion. In this we may be assisted by strips of sticking plaster, made with diachylon and pitch; but these strips should be guarded from touching the wound itself by means of lint or tow first put over it. When in addition to laceration in a wound, there is a destruction of substance, then the caution of washing will not apply, as it will be necessary to bathe with some warming spirit, as, tincture of myrrh, tincture of aloes, or friar's balsam, to assist in restoring the life of the part, and in preventing mortification. Bleeding must be stopped by pressure and astringents, as powdered alum; when it is very considerable the vessel from whence the blood comes must be taken up. When great inflammation follows wounds or bruises, counteract it by bleeding, a cooling temperature, opening medicines, and continual fomentations to the part itself

Balls and Drinks.

111. *Mode of giving a ball.* Back the horse in his stall, and being elevated on a stool, (not a bucket turned upside down,) gently draw the tongue out of the mouth, so as to prevent its rising to resist the passage of the hand: the tongue should however not be laid hold of alone, but it should be held firmly by the fingers of the left hand against the jaw. The ball previously oiled should be taken into the right hand, which should be squeezed into as narrow a shape as possible, must be passed up close to the roof of the mouth, and the ball placed on the root of the tongue, when both hands being withdrawn, it will readily pass down. This mode is much preferable, when a person is at all handy, to using a balling iron.

112. *Mode of giving a drink.* Exactly the same process is pursued, except that a horn holding the liquid matter is forced up the mouth; the passage being raised beyond the level line, the liquid is poured out from the larger end of the horn, and when the tongue is loosened it is swallowed. Clark, however, ingeniously proposes to substitute the smaller end of the horn, the larger being closed, by which, he says, the horn can be forced up the mouth between the teeth, and poured farther back so as to ensure its not returning.

Fomentations and Poultices.

113. *Fomentations* are very commonly recommended of various herbs, as rhue, chamomile, St. John's wort, wormwood, bay leaves, &c. but the principal virtue is to be found in warmth and moisture, which unload the vessels; but this warmth ought not to be too considerable, except when the inflammation is within, as in inflamed bowels. Here we foment to stimulate the skin, and cannot foment too hot; but when we do it at once to an inflamed part, it ought not to be more than of blood heat; and it should be continued long, and when removed the part should be dried or covered, or cold may be taken, and the inflammation increased instead of diminished. *Anodyne fomentations* are made of poppy heads and of tobacco, and are frequently of great use.

114. *The method of applying fomentations* is conveniently done by means of two large woollen cloths wrung out of the heated liquors. as one is cooling the other should be ready to be applied.

115. *Poultices* act in the same way as fomentations in allaying irritation and inflammation; but are in other respects more convenient because they act continually. It is an error to suppose that poultices, to be beneficial, should be very hot; however hot they may be applied, they soon become of the temperature of the surrounding parts. When poultices are applied to the extremities, a stocking, as has been before stated, is a convenient method of application. When it is drawn over the leg and bound around the lower part of the hoof, or of the pastern, or otherwise, the matter of the poultice may be put within, and it may be then kept in its situation, if high up on the extremity, by means of tape fastened to one part of it, and passed over the withers or back to the other side, and again fastened to the stocking. In this way, also, loose bandages may be retained from slipping. *Cold poultices* are often useful in the inflammations arising from strains, &c. In these cases brand and goulard water form a convenient medium; but when the poultice

tice is necessarily hot, a little linseed meal added to the bran will render it adhesive, and give it consistence. It is a very necessary caution in this, as in every instance where bandages are wanted around the extremities, to have them broad, and only so tight as to secure the matters contained, as in a poultice, or as in common bandaging. It is often supposed that "as strong as a horse," denotes that nothing can be too strong for him, nor any means too violent to hurt him. The horse, on the contrary, is one of the most tender animals alive: and a string tied very tight round the leg would occasion first a falling off of the hoof, next a mortification of the rest of the limb, and lastly the death of the animal; and all this as certainly as though he were shot with a bullet through the head.

Setons and Rowels.

116. *Setons* are often useful in keeping up a drain to draw what are termed humours from parts; or by their irritations on one part, they lessen the inflammation in another part not very remote, as when applied to the cheek for ophthalmia or inflamed eyes. They also in the same way lessen old swellings by exciting absorption. Another useful action they have is to make a dependent or convenient orifice for the escape of lodged matter: thus a seton passed from the upper part of the opening of pole evil, through the upper part of the integuments of the neck, as low as the sinuses run, will often effect a cure without further application. The same with fistulous withers, which sometimes run under the shoulder blade, and appear at the arm point; in which case a blunt seton needle, of sufficient length to be passed down to that point, and to be then cut down upon, will form the only efficient mode of treatment. Setons may be passed in domestic farriery, with a common packing needle and a skein of thread, or piece of tape: but in professional farriery they are made by a proper needle armed with taw or lamp cotton, or skeins of thread or silk smeared over with digestive ointment. When the seton needle is removed, the ends of the tape should be joined together, or otherwise notted, to prevent them from coming out.

117. *Rowels* in their intention act as setons, and as irritating a larger surface, so when a general drain is required they act better; as in case of grease, &c. but when their action is confined to a part only, setons are more convenient. Any person may apply a rowel by making an incision in the loose skin about an inch separating with the finger its adherence around, and then inserting in the

opening a piece of round leather, with a hole in the middle, smeared with a blistering ointment. Then plug the opening with tow, and in three days, when the suppuration has begun, remove it. The rowel leather is afterwards to be daily removed and cleaned.

Blistering and Firing.

118. *Blistering* answers the same purposes as setons, and is practised by first cutting or shaving the hair from the part, when the blistering ointment (*Vet. Pha.* 138.) should be well rubbed in for ten minutes, or a quarter of an hour. Some of the ointment after the rubbing may be smeared over the part. The head of the horse should now be tied up to prevent his gnawing or licking. If a neck cradle be at hand, it may also for safety be put on; in which the head may be let down the third day.

119. *A neck cradle for blistered horses* is very convenient for other occasions also, when the mouth is to be kept from licking or biting other parts; or to keep other parts from being rubbed against the head. It is of very simple construction, and may be made by a dozen pieces of wood of about an inch and half diameter, as old broom handles, &c. These bored at each end admit a rope to pass through; and as each is passed on, a knot may be tied to the upper part of the pieces of the cradle, two inches apart; and those which form the lower part, four inches; by which means the neck will be fitted by the cradle when it is put on; and the horse will be prevented from bending his head to lick or gnaw parts to be protected. When the lower parts of the legs, particularly the hinder, required blistering, it is necessary to bear in mind that in gross full horses, particularly in autumn, grease is very apt to follow blistering; and almost certainly if the back of the heels below the fetlock be blistered. First, therefore, smear this part over with lard or suet, and afterwards avoid touching it with the ointment. After blistering in summer, the horse is often turned out before the blistered parts are quite sound; in this case guard them from flies by some kind of covering, or they may become fly-blown: and likewise on the fourth or fifth day rub into the blistered part some oil or lard to prevent the skin from cracking.

120. *Sweating or liquid blisters*, (*Vet. Pha.* 142,) are only more gentle stimulants, which are daily applied to produce the same effects on a diseased part without removing the hair. Of course less activity is expected; yet as the action is repeated, they are often more beneficial even than blistering itself; as in old strains and stiffnesses.

121. *Firing*, as requiring the assistance of an experienced practitioner, we shall not describe; it will be prudent only to point out that it is a more active mode of blistering; and that it acts very powerfully as a stimulant, not only while its effects last as blisters do, but also after its escharotic effect is over, by its pressure; and in this way it is that it operates so favourably in bony exostosis, as splints and spavins; and in this way it is so useful in old ligamentary weaknesses; because by lessening the dilatibility of the skin it becomes a continual bandage to the part.

Clystering and Physicking.

122. *Clystering* should always be preceded by *back-raking*, which consists in oiling one hand and arm, and passing them up the fundament, and by that means to remove all the dung balls that can be reached. The large pewter syringe for clystering, is neither a useful or safe machine. A much better consists in a turned box pipe, to which may be attached a large pig or ox bladder, by which four or five quarts of liquid can be administered at one time. (*Vet. Pharm.* 134, to 146.) The pipe should be previously oiled, by which means it passes more easily: the liquor should then be steadily pressed up; and when the pipe is removed, the tail should be held down over the fundament a little to prevent the return of the clyster. In some cases of a spasmodic nature, as gripes and locked jaw, great force is made by the bowels to return the clyster, and nothing but continued pressure over the fundament can enable it to be retained. *Clysters* not only act in relaxing the bowels, but they may be used as means of nutriment when it cannot be taken by the mouth; as in locked jaw, wounds of the mouth, throat, &c. &c. In locked jaw, it was observed by Gibson, that he kept a horse alive many days by clysters alone; and by clysters also, many medicines may be given more conveniently than by the mouth.

123. *Physicking of horses.* It is equally an error to refrain altogether from giving horses physic, as it is to give it on every occasion, as some do. Neither is it necessary for horses to be bled and physicked every spring and autumn, if they be in perfect health, and the less so, as at this time they are generally weak and faint from the change going on in their coats—nor is it always necessary to give to horses physic when they come from grass or a straw yard; provided the change from the one state to the other be very moderately brought about. But on such a removal, it certainly expedites all the phenomena of condition, (2) and such horses are less likely to *fall to pieces*, as it is termed afterwards. (3.) In various morbid states physic is particularly useful, as in worms, hide bound,

from too full a habit, &c. &c. It is not advisable to physic horses in either very cold or very warm weather. Strong physic is always hurtful; all that physic can do is as well operated by a mild as by a strong dose, with infinitely less hazard. No horse should be physicked whose bowels have not been previously prepared by mashing for two days at least before. By these means the physic will work kindly, and a moderate quantity only is requisite. Most of the articles put into the purging balls for horses, to assist the aloes, are useless. Jalap will not purge a horse, nor rhubarb either. Aloes are the only proper drug to be depended on for this purpose, and of all the varieties of aloes the socotorine and Cape are the best. (*Vet. Pha.* 163.) Barbadoes aloes are also not improper, but are thought more rough than the socotorine. For formulæ of purging balls, see *Vet. Pha.* (163.) Blaine gives the following as the process:

124. *Physicking process.* The horse having fasted an hour or two in the morning from food, but having had his water as usual, give him his purge, and two hours after offer him a little chilled, but not warm water, as is often done, by which horses are disgusted from taking any; it may be here remarked that in this particular much error is frequently committed. Many horses will drink water with the chill taken off, provided it be perfectly clean, and do not smell of smoke from the fire, kettle or sauce-pan; but few, very few, will drink warm or hot water; and still fewer, if it be in the least degree greasy or smoky. After the ball has been given two hours, a warm bran mash may be offered, and a very little hay. He should have walking exercise as usual moderately clothed; and altogether he should be kept rather warmer than usual. At noon mash again, and give a little hay, which should be repeated at night, giving him at intervals chilled water. On the following morning the physic may be expected to work; which if it do briskly, keep the horse quiet; but should it not move his bowels, or only relax them, walk him quietly half an hour, which will probably have the desired effect. Continue to give mashes and warm water, repeating them every two or three hours to support him. When physic gripes a horse, give a clyster of warm water, and hand rub the belly, as well as walk him out. If the griping prove severe, give him four ounces of gin in half a pint of strong ale, which will soon relieve him. On the next day the physic will probably set, but should it continue to work him severely, pour down some boiled starch; and if this fail, turn to the directions under diarrhœa. (52.) The horse should return to his usual habits of feeding and full exercise by degrees; and if more than one dose is to be given, a week should intervene. It is often requisite to make the second and third doses rather stronger

than the first. A very mild dose of physic is likewise often given to horses while at grass in very warm weather, and without any injury. When worms, or skin foulness are present, and mercurial physic is deemed necessary, it is better to give two drachms of calomel in a mash the previous night, than to put it into the purging ball.

Castration, Nicking, Docking, &c.

125. *The operations of castration, docking, nicking, and that of cropping,* (which is seldom practised,) all require the assistance of a veterinary surgeon; and it is only necessary to remark of them, that the after treatment must be the same as in all other wounds. To avoid irritation, to preserve a cool temperature and a moderate diet; and if active febrile symptoms make their appearance, to obviate them by bleeding, &c. &c. It likewise is proper to direct the attention of the agriculturist who attends to these matters himself, that the moment the wound following any of these operations looks otherwise than healthy, locked jaw is to be feared, and no time should be lost in seeking the best assistance that can be obtained. (11.) See Mason, p. 148.

Bleeding.

126. *Bleeding* is a very common, and to the horse a very important operation, because his inflammatory diseases, on account of the great strength of his arterial system, run to a fatal termination very soon and can only be checked in the rapidity of their progress by abstracting blood, which diminishes the momentum of circulation. Bleeding is more particularly important in the inflammatory diseases of the horse; because we cannot, as in the human, lower the circulation by readily nauseating the stomach. Bleeding also lessens irritation, particularly in the young and plethoric, or those of full habit: hence we bleed in spasms of the bowels, in locked jaw, &c. with good effect. Bleeding is general or topical. *General* as from the neck, when we mean to lessen the general momentum. *Topical* when we bleed from a particular part, as the eye, the plate vein, the toe, &c. Most expert practitioners use a large lancet to bleed with; and when the habit of using it is acquired, it is by far the best instrument, particularly for superficial veins where a blow might carry the fleam through the vessel. In common hands the fleam as the more general instrument is best adapted to the usual cases requiring the agriculturist's notice. Care should, however, be taken not to strike it with vehemence, and the hair being first wetted and smoothed down, it should be pressed close between the hairs, so

that its progress may not be impeded by them. A ligature should be first passed round the neck, and a hand held over the eye, unless the operator be very expert, when the use of the fingers will dispense with the ligature. The quantity of blood taken is usually too small. In inflammatory diseases, a large horse, particularly in the early stage of a complaint, will bear to lose eight or ten quarts: and half the quantity may be taken away two or three times afterwards, if the violence of the symptoms seem to require it; and the blood should be drawn in a large stream to do all the good it is capable of. After the bleeding is finished introduce a sharp pin, and avoid drawing the skin away from the vein while pinning, which lets the blood escape between the vein and skin; wrap round a piece of tow or hemp, and next day remove the pin, which might otherwise inflame the neck. In drawing blood let it always be measured; letting it fall on the ground prevents the ascertaining the quantity; it also prevents any observation on the state of the blood; which if it form itself into a cup-like cavity on its surface, and exhibit a tough yellow crust over this cavity it betokens an inflammatory state of blood that will require further bleedings, unless the weakness forbid. After the bleeding, it now and then happens from rusty lancets, too violent a stroke with the blood stick, or from drawing away the skin too much while pinning up, that the orifice inflames and hardens, and ichor is seen to ooze out between its edges. Immediately after this is discovered, recourse must be had to an able veterinary surgeon, or the horse will lose the vein, and perhaps his life.



THE VETERINARY PHARMACOPŒIA.

127. The following *formulæ for veterinary practice* have been compiled from the works of the most eminent veterinary writers of the present day, as Blaine, Clark, Laurence, Peel, White, &c.; and we can from our own experience also, confidently recommend the selection to the notice of agriculturists, and the owners of horses in general. It would be prudent for such as have many horses, and particularly for such as live at a distance from the assistance of an able veterinarian, to keep the more necessary articles by them in case of emergence: some venders of horse drugs keep

veterinary medicine chests: and where the compositions can be depended on, and the un-compounded drugs are genuine and good, one of these is a most convenient appendage to every stable.

128. *The veterinary pharmacopœia for oxen, calves and sheep* has been included in the arrangement. Where any speciality occurs, or where distinct recipes are requisite, they have been carefully noticed; it will therefore only be necessary to be kept in mind, that with the exception of acrid substances, as mineral acids, &c. which no cattle can bear with equal impunity with the horse; the remedies prescribed require about the following proportions: A large ox will bear the proportions of a moderate sized horse; a moderate sized cow something less; a calf about a third of the quantity; and a sheep about a quarter, or at most a third of the proportions directed for the cow. It is also to be remarked, that the degrees in strength in the different recipes, are usually regulated by their numbers, the mildest standing first.

129. *Alteratives.*

1.

Levigated antimony, 2 drachms.
Cream of tartar,
Flour of sulphur, each half an ounce.

2.

Cream of tartar,
Nitre, of each half an ounce.

3.

Æthiop's mineral,
Levigated antimony,
Powdered resin, each three drachms.

Give in a mash, or in oats and bran, a little wetted, every night, or make into a ball with honey.

130. *Tonic Alteratives.*

1

Gentian

Aloes,

Ginger,

Blue vitriol, in powder, of each
1 drachm,

Oak bark in powder, 6 drachms.

2.

Winter's bark in powder, three drachms.

Green vitriol, do. one and a half drachms,

Gentian, do. three drachms.

Make either of these into a ball with honey, and give every morning.

3.

White vitriol, 1 drachm,

Ginger or pimento, ground, two drachms,

Powdered quassia half an ounce,
Ale 8 ounces.

Mix and give as a drink.

4.

Arsenic, 10 grains,
Oatmeal, 1 ounce.

Mix and give in a mash, or moistened oats nightly.

131. *Astringent Mixtures for Diarrhœa, Lax or Scouring.*

1.

Powdered ipecacuanha, one drachm,

Do. opium, half a drachm,

Prepared chalk, 2 ounces,

Boiled starch, 1 pint.

2.

Suet 4 ounces, boiled in

Milk, 8 ounces,

Boiled starch, 6 ounces,

Powdered alum, 1 drachm.

The following has been very strongly recommended in some cases, for the lax of horses and cattle.

3.

Glauber's salts 2 ounces,

Epsom do. 1 ounce,

Green vitriol 4 grains,

Gruel, half a pint.

When the lax or scouring at all approaches to dysentery or molten grease, the following drink should be first given.

4.

Castor oil, 4 ounces,

Glauber's salts, dissolved, two ounces,

Powdered rhubarb, half a drachm,

Powdered opium, 4 grains,

Gruel, 1 pint.

132. *Astringent balls for Diabetes or pissing evil.*

Catechu, [Japan earth] half an ounce,

Alum powdered, half a drachm,

Sugar of lead, 10 grains,

Conserve of roses, to make a ball.

133. *Astringent paste for thrush, foot-rot, foul in the foot. &c.*

Prepared calamine,
Verdigris, of each half an ounce,
White vitriol,
Alum, of each half a drachm.
Tar, 3 ounces. mix

134. *Astringent washes for cracks in the heels, wounds, &c.*

1.

Sugar of lead, 2 drachms,

White vitriol, 1 drachm,

Strong infusion of oak, or elm bark, 1 pint: mix.

2.

Green vitriol, 1 drachm,

Infusion of galls, half a pint,

Mix and wash the parts three times a day.

135. *Powder for Cracks, &c.*

3.

Prepared calamine, 1 ounce,

Fuller's earth, powdered,

Pipe clay, do. of each 2 ounces,

Mix and put within gauze, and dab the moist surfaces of the sores frequently.

136. *Astringent Paste for Grease*

1.

Prepared calamine,

Tutty, powdered,

Charcoal, do. of each 2 ounces,

Yeast enough to make a paste.

2.

To the above, if more strength be required, add of alum and verdigris each a drachm.

137. *Astringent Wash for do.*

3.

Corrosive sublimate, ʒ drachms,

Spirit of wine or brandy 1 ounce.

Soft water, 10 ounces.

Rub the sublimate in a mortar with the spirit till dissolved then add the water. This is a strong preparation and has often proved successful in very bad

cases of grease, which have resisted all the usual remedies.

138. *Blisters.*

1. A general one.

Cantharides powdered, 2 ounces,
Venice turpentine, do.

Resin, do.

Palm oil or lard, 2 lbs.

Melt the three latter articles, together, and when not too hot stir in the Spanish flies.

2.

139. *A strong cheap blister, but not proper to be used in fevers or inflammations, as of the lungs, bowels, &c.*

- Euphorbium powdered, 1 ounce,
- Oil of vitriol, 2 scruples,
- Spanish flies, 6 ounces,
- Palm oil or lard,
- Resin, of each one pound,
- Oil of turpentine, 3 ounces.

Melt the resin with the lard or palm oil. Having previously mixed the oil of vitriol with an ounce of water gradually, as gradually add this mixture to the melted mass; which again set on a very slow fire for ten minutes more: afterwards remove the whole, and when beginning to cool, add the powders previously mixed together.

3.

140. *A mercurial blister, for splints, spavins, and ring bones.*

Of either of the above, 4 ounces,
Corrosive sublimate finely powdered, half a drachm.

4.

141. *Strong liquid blister.*

Spanish flies, in gross powder, 1 ounce.

Oil of origanum, 2 drachms,

Oil of turpentine, 4 ounces,

Olive oil, 2 ounces.

Steep the flies in the turpentine three weeks. strain off and add the oil

5.

142. *Mild liquid or sweating blister.*

Of the above one ounce,
Olive oil or goose grease, one and a half ounces.

143. *Clysters.*

1. A laxative one.

Thin gruel or broth, 5 quarts,
Epsom or common salts 6 ozs.

144. *Clyster for Gripes.*

2.

Mash two moderate sized onions,
Pour over them oil of turpentine,
2 ounces,
Capsicum or pepper, half an oz
Thin gruel, 4 quarts.

145. *Nutritious Clyster.*

3.

Thick gruel, three quarts,
Strong sound ale, one quart.

Or 4.

Strong broth, 2 quarts,
Thickened milk, 2 quarts.

146. *Astringent Clyster.*

5.

Tripe liquor or suet boiled in
milk, three pints,
Thick starch, 2 pints,
Laudanum, half an ounce.

Or 6.

Alum whey, one quart,
Boiled starch, two quarts.

147. *Cordial Balls.*

Gentian powdered, 4 ounces,
Ginger do. 2 ounces,
Coriander seeds do. 4 ounces,
Caraway do. 4 ounces,
Oil of aniseed, quarter of an oz
Make into a mass with honey,
treacle or lard, and give an ounce
and a half for a dose.

148. *Chronic Cough Balls*

1.

Ca. omel 1 scruple

Gum ammoniacum,
Horse radish, of each 2 drachms,
Balsam of Tolu,
Squills, each one drachm.

Beat all together, and make into a ball with honey, and give every morning fasting.

149. *Drink for the same.*

2.

Tar water,
Lime water, of each half a pint,
Tincture of squills, half an oz.

150. *Powder for the same.*

3.

Tartar emetic, 2 drachms,
Powdered foxglove, half a drachm,
Powdered squill, half a drachm,
Calomel, one scruple,
Nitre 3 drachms.

Give every night in a malt mash.

151. *Diuretic Balls.*

Resin, yellow, 1 pound,
Nitre half a pound,
Horse turpentine, half a pound,
Yellow soap, quarter of a pound.

Melt the resin, soap, and turpentine over a slow fire; when cooling add the nitre. For a strong dose, an ounce and a half, for a mild one an ounce. It should be kept in mind, that mild diuretics are always equal to what is required; and that strong diuretics are always hurtful.

152. *Diuretic Powders.*

Yellow resin, powdered, 4 ozs.
Nitre, ditto, 8 ounces,
Cream of tartar, do. 4 ounces.

Dose—6, 8, or 10 drs. nightly, which some horses will readily eat in a mash

153. *Urine Drink*

Glauber's salts. two ounces.

Nitre, 6 drachms.

Dissolve in a pint of warm water.

154. *Embrocations—* *oozing for inflammations.*

1.

Goulard's extract, half an ounce,
Spirit of wine or brandy 1 ounce.
Soft water, 1 quart.

2.

Mindererus spirit, 4 ounces,
Water, 12 ounces.

155. *For Strains.*

Bay salt, bruised, half a pound.
Crude sal ammoniac, 2 ounces,
Sugar of lead, quarter of an oz
Vinegar one pint and a half,
Water, one pint.

156. *For the Eyes.*

1.

Sugar of lead, 1 drachm,
White vitriol, 2 scruples,
Water, 1 pint.

2.

Brandy, 1 ounce,
Infusion of green tea, 4 ounces
Tincture of opium, 2 drachms,
Infusion of red roses, 4 ounces

3.

Rose water, 6 ounces,
Mindererus spirit, 3 ounces.

4.

Corrosive sublimate, 4 grains,
Alcohol, 1 ounce,
Lime water, 1 pint.

5.

Alum, powdered, 1 drachm.
Calomel, half a drachm.

Mix and insert a little at one corner of the eye. The custom of blowing it in alarms the horse

157 *Fever Powders.*

1.

Tartar emetic, 2 drachms,
Nitre, 5 drachms.

2.

Antimonial powder, 2 drachms.

Cream of tartar,
Nitre, of each four drachms.

158. *Fever Drink.*

3.

Sweet spirit of nitre, 1 ounce,
Mindererus spirit, 6 ounces,
Water, 4 ounces.

159. *Epidemic Fever Drink.*

4.

Sweet spirit of nitre, 1 ounce,
Simple oxymel, 6 ounces,
Tartar emetic, 3 drachms.

160. *Malignant Epidemic Fever.*

5.

Simple oxymel,
Mindererus spirit,
Beer yeast, of each 4 ounces,
Sweet spirit of nitre, 1 ounce.

161. *Fumigations for purifying
infected stables, sheds, &c.*

Manganese, 2 ounces,
Common salt, do.
Oil of vitriol, 3 ounces,
Water, 1 ounce.

Put the mixed manganese and salt into a bason; then, having before mixed the vitriol and water very gradually, pour them by means of tongs, or any thing that will enable you to stand at a sufficient distance, on the articles in the bason gradually. As soon as the fumes rise, retire and shut up the door close.

162. *Hoof Liquid.*

Oil of turpentine, 4 ounces,
Tar, 4 ounces,
Whale oil, 8 ounces.

This softens and toughens the hoofs extremely, when brushed over them night and morning.

163. *Purging Medicines.*

Balls—very mild.

Aloes powdered, 6 drachms,
Oil of turpentine, 1 drachm.

Mild.

Aloes, powdered, 8 drachms
Oil of turpentine, 1 drachm.

Strong.

Aloes, powdered, 10 drachms,
Oil of turpentine, 1 drachm.

The aloes may be beaten with treacle to a mass, adding, during the beating, the oil of turpentine. All spices, cream of tartar, oil of tartar, jalap, &c. are useless, and often hurtful additions.

164. *Liquid Purge.*

Epsom salts, dissolved, 8 ozs.
Castor oil, 4 ounces,
Watery tincture of aloes, 8 ozs.

Mix—The watery tincture of aloes is made by beating powdered aloes with the yelk of egg, adding water by degrees, by these means half an ounce of aloes may be suspended in 8 ounces of water, and such a purge is useful when a ball cannot be got down, as in partial locked jaw.

165. *Scalding Mixture for Poll
Evil.*

Corrosive sublimate, finely powdered, 1 drachm,
Yellow basilicon, 4 ounces.

166. *Foot Stoppings.*

Horse and cow dung, each about 2 pounds. Tar, half a pound.

167. *Wash for coring out, de-
stroying fungus, or proud flesh,
&c. &c.*

Lunar caustic one drachm,
Water, 2 ounces.

168. *Wash for Mange.*

Corrosive sublimate, 2 drachms,
Spirit of wine or brandy, 1 oz.
Decoction of tobacco,
Do. of white hellebore, of each 1 pint

Dissolve the mercury in the spirit, and then add the decoctions.

169. *Ointments for healing.*

1.

Turner's cerate, two ounces,
White vitriol powdered, half a
drachm,
Lard, 4 ounces.

170. *For Digesting.*

2.

Turner's cerate, two ounces,
White vitriol, 1 drachm,
Yellow basilicon, 5 ounces.

171. *For Mange.*

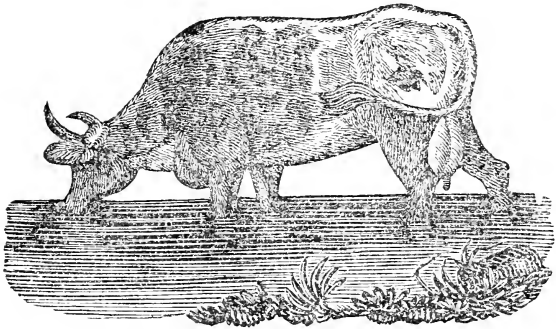
Sulphur vivum, 8 ounces,
Arsenic in powder, 2 drachms,
Mercurial ointment, 2 ounces,
Turpentine, 2 ounces,
Lard, 8 ounces.

Mix, and dress with every morning.

172. *For Scab or Shab in Sheep
Mallenders and Sellenders in
Horses, and foul blotches and
eruptions in cattle in general.*

Camphor, 1 drachm,
Sugar of lead, half a drachm,
Mercurial ointment 1 ounce.

OF 'THE DISEASES OF



HORNED CATTLE.

173. *Cattle are subject to some very dangerous diseases*, but as their life is less artificial, and their structure less complex, they are not liable to the variety of aliments which affect the horse. The general pathology of the horse and ox being little different, the fundamental rules for veterinary practice, and the requisite medicines, when not particularized, will be found in the *Veterinary Pharmacopœia*, already given. (126.)

174. *Mild fever*, pantas or pantasia. Cattle sometimes appear affected with heat, redness of the nostrils and eyelids; they refuse food, are dull, evacuate and stale with difficulty; and the urine is high coloured. These symptoms are often aggravated every other day, giving it the appearance of intermittent affection. The complaint is often brought on by over driving in very hot weather, occasionally by pushing their fattening process too fast. If there be no appearance of malignancy, and the heaving be considerable, bleed, and give half an ounce of nitre in a drink night and morning; but unless the weather be cold do not house the animal.

175. *Inflammatory fever* is called among farriers, cow-leeches, and graziers, by the various names of black quarter, joint felon,

quarter evil, quarter ill, showing of blood, joint murrain, striking in of the blood, &c. Various causes may bring this on. It is sometimes epidemic, and at others it seems occasioned by a sudden change from low to very full keeping. Over driving has brought it on. No age is exempt from it, but the young oftener have it than the mature. Its inflammatory stage continues but a few days, and shows itself by a dull heavy countenance, red eyes and eyelids: the nostrils are also red, and a slight mucus flows from them. The pulse is peculiarly quick; the animal is sometimes stupid, at others watchful, particularly at first; and in some instances irritable.—The appetite is usually entirely lost at the end of the second day, and the dung and urine either stop altogether, or the one is hard and the other is red. About the third day a critical deposit takes place, which terminates the inflammatory action: and it is to the various parts on which this occurs, that the disease receives its various names. The deposit is, however, sometimes universal, in the form of a bloody suffusion throughout the whole skin. In others, swellings from the joints, or on the back or belly; and in fact, no part is exempt from their attack. Sometimes the animal swells generally or partially, and the air being suffused under the skin, crackles to the feel. After any of these appearances have come on, the disease assumes a very malignant type, and is highly contagious.

176. *Treatment of inflammatory fever.* Before the critical abscess form, or at the very outset of the disease, bleed liberally, and purge also: give likewise a fever drink (158.) If, however, the disease be not attended to, in this early stage, carefully abstain from bleeding or even purging: but instead, throw up clysters of warm water and salt to empty the bowels, and in other respects treat as detailed under malignant epidemic. (15.) It may be added, that four drachms of muriatic acid, in three pints of oak bark decoction, given twice a day, has proved useful. The swellings themselves may be washed with warm vinegar both before and after they burst.

177 *Catarrh or influenza* in cattle, also known by the name of *feilon*, is only a more mild form of the next disease. Even in this mild form it is sometimes epidemic, or prevalent among numbers, or endemical by being local. Very stormy wet weather, changing frequently, and greatly also in its temperature, are common causes. We have seen it brought on by change of food from good to bad, and from too close pasturage. It first appears by a defluxion from the nose; the nostrils and the eyelids are red; the animal heaves, is tucked up in the flanks, and on the third day he loses the cud

There is a distressing and painful cough, and not unfrequently a sore throat also, in which case the beast almost invariably holds down his head. The treatment does not at all differ from that directed under the same disease in horses (13.) Bleeding only the first two days, carefully sheltering, but in an open airy place, littering well up.

178. *The malignant epidemic influenza* is popularly called *murrain* or *pest*; and has at various times made terrible havoc among cattle. Ancient history affords ample proof of its long existence, and by the accounts handed down, it does not seem to have varied its types materially. In 1757 it visited Britain, producing extreme fatality among the kine. From 1710 to 1714 it continued to rage on the continent with unabated fury, (*Lancisiss Disputatio Historica de Bovilla Peste.*) The years 1730 and 1731, and from 1744 to 1746, witnessed its attack, and produced many written descriptions of it, among which stands pre-eminent that of Sauvages, the celebrated professor of medicine, at Montpellier. The British visitation of the malady in 1757, elicited an excellent work from the pen of Dr. Layard, a physician of London, which was afterwards translated into several languages.

179. *Symptoms of the murrain.* Dr. Layard describes it as commencing by a difficulty of swallowing, and itching of the ears shaking of the head, with excessive weakness and staggering gait which occasions a continual desire to lie down. A sanious fœtid discharge invariably appears from the nostrils, and eyes also.—The cough was frequent and urgent. Fever, exacerbating, particularly at night, when it usually produced quickened pulse.—There was constant scouring of green fœtid dung after the first two days, which tainted every thing around, even the breath, perspiration, and urine were highly fœtid. Little tumours or boils were very commonly felt under the skin, and if about the seventh or ninth day these eruptions become larger, and boils or buboes appear with lessened discharge of fœces, they proved critical and the animal often recovered; but if on the contrary, the scouring continued, and the breath became cold, and the mouth dark in colour, he intorms us mortality followed. Sauvages describes the murrain as showing itself by trembling, cold shivers, nose excoriated with an acid discharge from it; purging after the first two days, but previous to which there was often costiveness. Great tenderness about the spine and withers was also a characteristic, with emphysema, or a blowing up of the skin by air discharged underneath it

180. *Dissections of those that have died* of this disease, according to Sauvages, have shown marks of great inflammation, and of a great putrid tendency; but the solid parts seldom ran into gangrene. The fluid secretions however, always were sufficiently dissolved and broken down by putridity. The paunch, he says, was usually filled with undigested matter, and the other stomachs highly inflamed: the gall bladder was also commonly distended, with acrid thick brown bile. Goelich, who likewise dissected these subjects, describes the gall as particularly profuse and intolerably fetid. According to him, the whole alimentary canal, from the mouth to the anus was excoriated; and Lancisi, contrary to Sauvages, found the viscera of the chest and belly, in some cases sphacelated and gangrenous. Gazola describes the murrain as accompanied with pustulous sores; and so great was the putrid tendency, that even the milk, before it dried up, which it usually did before the fourth day, became fetid.

181. *The treatment of the murrain.* In the very early stages, all eminent authors recommend bleeding; but which should not only be confined to the very early periods, as to the two first days; but also to such subjects as by their previous health and condition can bear it. The animals should be placed in an open airy place; the litter should be frequently renewed; and the place itself should be fumigated with the preventative fumigation. (161.) It has been recommended to burn green boughs with pitch as a substitute even charcoal fires occasionally carried around the place would be useful. Dr. Layard advises the body to be washed with aromatic herbs in water; but vinegar would have been better. In early stages, saline purgatives, as from ten to twenty ounces of Epsom salts are to be invariably used. If the scouring have already come on, still, however, purge; but with only half the quantity; an artificial purge will carry off the morbid bile; and if excessive weakness do not come on, the same may be advantageously repeated. Setons are also recommended in the dewlap. When abscess appear, they may be opened, and their contents discharged, washing the wound with brandy or vinegar, if putrid sloughing takes place. The emphysematous swellings or cracklings, may also be opened, and the air discharged. The other essentials of medical treatment, as detailed under malignant epidemic among horses, is here applicable in every particular. When recovery takes place, it is usually a very slow process, and requires care to prevent other diseases supervening. The animal should continue to be housed, and neither exposed to sun or wind for some time, and the feeding should be nutritious. The following *infallible cure of the bloody murrain in*

cattle, was given by Mr. Jones, of Gloucester county, Va. to Mr. Benjamin Harrison, of Charles City County, Va.—“ A quart of the infusion of cedar berries, (containing about half a pint of the berries) was given at a time, and in nearly every case the good effects were almost instantaneous: a considerable discharge from the bladder and bowels followed, and in five or ten minutes time, the animal began to eat. In nineteen cases out of twenty a perfect cure was effected. It may be necessary to repeat the drench four or five times ”

182. *The prevention of the murrain*, or the prevention of its spreading, in many respects is even more important than its medical treatment. Where it has already appeared, all the out-buildings, but particularly the ox-lodges or stalls, should be daily fumigated with the preventive fumigation (161;) and, even the whole of the infected districts should have frequent fires of green wood made in the open air, and every such district should be put under rigorous quarantine. The cattle on every farm should be carefully examined three or four times every day, and the moment one is found to droop, he should be removed to a distance from the others. In very bad weather, while it is prevalent, the healthy cattle should be housed, and particularly well fed; and their pastures should also be changed. The bodies of those who die of the disease should be buried with their skins on, very deep in the earth, and quick lime should be strewed over them.—*Prevention*—Mr. Wm. Minge, (of James River, Va.) recommends the use of a mixture of clay, salt, (in the common proportion for stock) tar and powdered brimstone. For fifty head, one gallon of tar and half a pound of brimstone, per week, put in a trough to which the cattle had free access. The disease, it appears, is *endemic* in Virginia, particularly in the districts bordering on tide water.

183. *Phrenzy fever*, or inflammation of the brain, called also *cough*, now and then, but by no means frequently, attacks cattle. The symptoms differ but little from those which attack horses.—The *treatment* must be exactly similar.

184. *Inflammation of the lungs* occasionally occurs in cattle, in which also the symptoms, progress, and proper *treatment*, are similar to those detailed under that head in horse pathology (31.)

185. *Inflammation of the stomach* sometimes occurs from poisonous matters; and in such cases, when the nature of the poison is discovered, the *treatment* detailed under poison in horse pathology

must be pursued. But there is a species of indigestion, to which cattle are liable in the spring, from eating voraciously of the young sprouts of wood; to which some woods are more conducive than others. The symptoms are heat, thirst, costiveness, lessened urine, quick and hard pulse, with heat and redness in the mouth and nose; the belly is hard and painful, and the stools, when they appear, are covered with glare. When the mouth and nose discharge a serous fluid, the animal usually dies.

186. *Treatment.* Bleed at first, open the bowels by saline purgatives (164.) After this give large quantities of nitrated water, and clyster also largely.

187 *The hove or blown* in cattle is also an inflammatory affection of the paunch, ending in paralysis and rupture of its substance. From the frequency of its occurrence, it has become a subject of investigation with almost every rational grazier, and a particular matter of inquiry with every agricultural body; from whence it is now very successfully treated by the usual attendants on cattle, when skilful; but when otherwise, it usually proves fatal. It is observed to be more frequent in warm weather and when the grass is wet. When either oxen, cows, or sheep, meet with any food they are particularly fond of, or of which they have been long deprived, as potatoes, turnips, the different grasses, particularly red clover; they eat greedily, and forget to lie down to ruminate; by which means the first stomach or paunch, becomes so distended as to be incapable of expelling its contents. From this inflammation follows, and fermentation begins to take place: a large quantity of air is let loose, which still adds to the distention, till the stomach either bursts, or by its pressure on the diaphragm, the animal is suffocated. This situation of the beast is known by the uneasiness and general swelling of the abdomen; with the circumstances of the animal being found with such food, or the presumption that it has met with it.

188. *Treatment.* There are three modes of relieving the complaint, which may be adverted to according to the degree of distention, and length of time it has existed. These are internal medicines; the introduction of a *probang* of some kind into the paunch by the throat: and the puncturing it by the sides. Dr. Whyatt of Edinburgh, is said to have cured eighteen out of twenty hoved cows, by giving a pint of gin to each. Oil, by condensing the air, has been successfully tried. Any other substance also, that has a strong power of absorbing air, may be advantageously given.

Common salt and water, made strongly saline, is a usual country remedy. New milk, with a proportion of tar equal to one-sixth of the milk, is highly spoken of. A strong solution of prepared ammonia in water often brings off a great quantity of air, and relieves the animal. Any of these internal remedies may be made use of when the hoven has recently taken place, and is not in a violent degree. But when otherwise, the introduction of an instrument is proper, and is now very generally resorted to. The one principally in use is a species of probang, invented by Dr. Munro, of Edinburgh. Another consisting of a cane of six feet in length, and of considerable diameter, having a bulbous knob of wood, has been invented by Eager, which is a more simple machine, but hardly so efficacious. It is probable that in cases of emergency, even the larger end of a common cart whip, dexterously used, might answer the end. But by far the best instrument for relieving hoven cattle, as well as for clystering them, is Read's enema apparatus, which is alike applicable to horses, cattle, and dogs. It consists of a syringe, to which tubes of different kinds are applied, according to the purpose, and the kind of animal to be operated upon. There is a long flexible tube for giving an enema to horses and cattle, and a smaller one for dogs. To relieve hoven bullocks effectually, it is necessary not only to free the stomach from an accumulation of gas, but from the fermenting puitaceous mixture which generates it; for this purpose a tube is applied to the extremity of the syringe, and then passed into the animal's stomach, through the mouth, and being put in action, the offending matter is discharged by a side opening. When the same operation is performed on sheep, a smaller tube is made use of. The characteristic excellency of Read's instrument, is, that there is no limit to the quantity of fluid that may not be injected or extracted. The same syringe is used for extracting poison from the stomach of man, for smoking insects, extinguishing fires, and syringing fruit trees. The introduction of any of these instruments may be effected by the help of an assistant, who should hold the horn of the animal by one hand and the dividing cartilage of the nose with the other; while the operator himself, taking the tongue in his left hand, employs his right in skilfully and carefully introducing the instrument; the assistant bringing the head and neck into such an attitude as to make the passage nearly straight, which will greatly facilitate the operation. But when no instruments can be procured, or as cases may occur when indeed it is not advisable to try them, as when the disease has existed a considerable time, or the animal has become outrageous, or the stomach so much distended with air that there is danger of immediate suffocation or bursting in these instances the puncture of the maw must be

instantly performed, which is called *paunching*. This may be done with the greatest ease; midway between the illium or haunch bone, and the last rib of the left side, to which the paunch inclines; a sharp pen-knife is frequently used, and persons in veterinary practice should always keep a long trochar; which will be found much the most efficacious, and by far the most safe, as it permits the air escaping certainly and quickly, at the same time that it prevents its entrance into the cavity of the abdomen, which would occasion an equal distention. As soon as the air is perfectly evacuated, and the paunch resumes its office, the trochar may be removed; and in whatever way it is done, the wound should be carefully closed with sticking plaster or other adhesive matter. It is necessary to observe, that this operation is so safe, that whenever a medical assistant cannot be obtained, no person should hesitate a moment about doing it himself. After relief has been afforded, a stimulant drink may yet be very properly given, such as half a pint of common gin; or one ounce of spirit of hartshorn in a pint of ale; or two ounces of spirit of turpentine in ale, may any of them be used as an assistant stimulus. When also the cud is again chewed, still some relaxation of the digestive organs may remain; at first, therefore, feed sparingly and give for a few mornings a tonic. [130 No. 1.]

189. *Inflammation of the bowels, or red colic*, is by no means unknown in cattle pathology; the symptoms of which do not differ from those common to the horse, and the treatment also, is in every respect the same. (45.)

190. *Inflammation of the liver, or hot yellows*, sometimes occur, in which case, in addition to the symptoms detailed under hepatitis in the horse (58,) there is, from the presence of systic bile in the ox, a more determined yellowness of the eye-lids, mouth, and nostrils, the treatment must be similar. (58.)

191. *Inflammation of the kidneys, called red water*, by the cow-leeches, is not uncommon among cattle, and is perhaps dependent on the lobulated form of these parts in them. The animal to the other symptoms of fever, adds stiffness behind, and often straddles, but always shrinks on being pinched across the loins, where frequently increased heat is felt, the urine is sometimes scanty, and now and then increased in quantity, but it is always first red, then purple, and afterwards brown or black, when a fatal termination may be prognosticated. The treatment has been fully detailed under nephritis in the horse pathology, (60) and which consists in plentiful bleedings, &c. but carefully abstaining from the use of diuretics, as advised by ignorant cow-leeches

192. *Black water* is only the aggravated and latter stages of the above

193. *Inflammation of the bladder* also now and then occurs, and in no wise differs from the cystitis of the horse, in consequences and treatment. (62.)

194. *The colics of cattle*, arise from different causes; they are subject to a spasmodic colic, not unlike that of horses, and which is removed by the same means. (53.) Costiveness also brings on a colic in them, called clue bound, fardel bound, &c. which often ends in red colic, unless early removed; the treatment of this we have fully detailed. (55.) Another colic is accompanied with relaxation of bowels.

195. *Diarrhœa, scouring, or scouring cow*, is common in cattle, and is brought on by exposure to rain, improper change of food, over driving, and other violences. It is essentially necessary that the animals be taken under cover, kept warm and dry, and have nutritious food allowed them. The medical treatment has been detailed. (52.)

196. *Dysentery or braxy, bloody ray, and slimy flux*, differs from simple scouring, in a greater degree of fever attending it, and in its being an inflammation of a particular kind, and part of the intestines. It is frequently dependent on a vitiated putrid state of the bile, brought on by over driving in hot weather, low damp pastures in autumn, &c. The discharge is characterized by its bad smell, and by the mucous stringy patches in it, and also by its heat and smoking when voided; all which are very different from the mere discharge of the aliments in a state of solution in diarrhœa, and which differences should be carefully marked to distinguish the one from the other; treat as under dysentery in the horse. (49.)

197. *Yellows*. When active fever is not present, and yet cattle are very dull, with great yellowness of eyelids, nostrils, &c. it arises from some biliary obstruction, to which oxen and cows are more liable than horses, from their being furnished with a gall bladder, it is a more common complaint in some of the cold provinces on the continent, where they are housed and stall fed all the year round, than it is in England. The treatment is the same as detailed for chronic inflammation of the liver in horses (59) adding in every instance to it, a change of pasturage, and if convenient, into salt marshes, which will alone often effect a cure

198. *Loss of the cud.* This enters the list of most cow-leeches' diseases, but is less a disease than a symptom of some other affection; indeed it is evident that any attack sufficient to destroy the appetite will generally occasion the loss of the cud. It is possible, however, that an occasional local affection or paralysis of the paunch may occur, particularly when it is distended with unhealthy substances, as acorns, crabs, the tops of some of the woody shrubs, &c. The treatment in such cases consists in stimulating the stomach by tonics, as aloes, pepper, and gin mixed; though these, as liquids may not enter the stomach in common cases, yet in this disease or impaired action of the rumen, they will readily enter there.

199. *Staggers, daisy or turning,* are sometimes the consequences of over feeding, particularly when from low keeping, cattle are suddenly removed to better pasturage. Treat with bleeding and purging.

200. *Tetanus, or locked jaw,* now and then attacks cattle, in which case it presents the same appearances and requires the same treatment as in horses. (11.)

201. *Cattle surgery* is in no respect different from that in practice among horses, the wounds are treated in the same manner. Goring with the horns will sometimes penetrate the cavity of the belly, and let out the intestines; the treatment of which is the same as in the horse. (56.) Strains, bruises, &c. are also to be treated like these of horses.

202. *Foul in the foot.* This occasionally comes on of itself, but is more often the effect of accident: cleanse it well and keep it from dirt:—apply the foot paste. (166.)

203. *Wornals, or puckeridge,* are tumours on the backs of cattle occasioned by a dipterous insect which punctures their skin, and deposits its eggs in each puncture. When the eggs are hatched, and the larvæ or maggots are arrived at their full size, they make their way out, and leave a large hole in the hide, to prevent which the destruction of the egg should be attempted by nipping the tumour, or thrusting in a hot wire.

204. *Cattle obstetrics* are not very varied; young cows of very full habits have sometimes a super-abundant secretion of milk before calving, which produces fever and heat; sometimes from cold taken the same will occur after calving also: in either case, give mild dry food or hay; bathe the udder also with vinegar and water, in some

cases, warm fomentations do best. If the fever run high, treat as under fever in horse pathology.

205. *The process of calving* is usually performed without difficulty; sometimes, however, cross presentations take place, and sometimes a constriction of parts prevents the natural passage of the calf. To act properly on these occasions, great patience is required, and much mildness; many cows have been lost by brutal pulling; we have seen all the men and boys of a farm mustered to pull at a rope affixed about a calf, partly protruded, which, when it was thus brought away, was forced to be killed, and the mother soon died also from the protrusion of parts this brutal force brought with the calf. A steady, moderate pull, during the throes of the animal, will assist much; having first directed the attention to the situation of the calf, and that the presentation is such as not to obstruct its progress; if it does, the calf must be forced back, and turned or placed aright.

206. *Whethering, or retention of the after-birth or burden.* It sometimes happens that this is retained; for which no better remedy has been hitherto discovered than warm clothing and drenching with ale, administered as a forcer.

207. *The diseases of calves* are principally confined to a species of *convulsions* which now and then attacks them, and which sometimes arises from worms, and at others from cold. When the first cause operates, it is then relieved by giving a mild aloetic purge, or in default of that, a mild dose of oil of turpentine, as half an ounce night and morning. In the second, wrap up the animal warm, and drench with ale and laudanum a drachm. Calves are also very subject to diarrhœa or scouring, which will readily yield to the usual medicines. (131.)

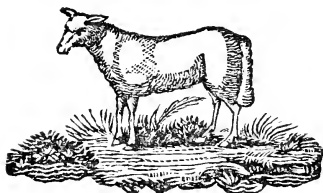
208. *Horn distemper or horn ail.* A disorder incident to horned cattle, by which the internal substance of the horn (commonly called the *pith*, which is the spongy part of the bone) wastes away, &c. This disorder may be known by a dullness in the countenance, a sluggish motion, want of appetite, a desire to lie down frequently, shake their head and appear dizzy, &c. To be sure of this disease, take a small gimblet and perforate the horn 2 or 3 inches above the head: if it is hollow and no blood follows, it is the hollow horn; This distemper is generally brought on by poverty, &c.

Bore each horn at the upper and lower side that the drain may have vent, and administer at least two or three doses of salts or

some gentle purgative; inject into the horn strong vinegar and camphorated spirits of salt and vinegar: this will cleanse the horn and effect a cure. Sawing off the horn is sometimes performed, but the above receipt is preferable.

209. *Vermin on cattle.* It is found that a strong decoction of tobacco washed over a beast infected with vermin will generally drive them away. It sometimes will make the beast very sick for a short time. But a better remedy is to mix a plenty of strong Scotch snuff in train oil, and rub the back and neck of the creature with it; which will effectually kill or drive away all vermin from a quadruped.

Salt—Let it be remembered, when given to animals, enables the farmer to increase his live stock and keep them in health; hence it ought freely to be given to sheep and cattle of every description. but, to imitate nature, it should be previously dissolved and then mixed with pure fine clay in a mass, which is to be placed under a shelter so that the animals may lap it at pleasure.



THE
DISEASES OF SHEEP.

210. *The diseases of sheep* are numerous ; for these animals are now so highly cultivated that they may be regarded in some respects as artificial machines : and thus, as a natural consequence, they are subject to a variety of artificial defects and maladies.

211. *The rot is a popular term* among shepherds, and includes within its range diseases widely different. We shall not therefore follow the custom of treating the different rots of sheep together ; but we shall allow them to fall in the natural order, according to the plan pursued with the diseases of oxen.

212. *The inflammatory and putrid fever*, popularly known by the names *higham striking* or *blood striking*, does not differ materially from the same disease in oxen and cows : and is in sheep also sometimes epidemic, appearing by panting, dullness, watery mucus from the nose and eyes, and great redness of all such parts as are usually white.

213. *The red water*. The inflammatory fever sometimes resolves itself into an universal secretion of serum throughout all the cavities ; in which case after a few days, the lymph tinged with blood will come away from the nose and mouth in large quantities. Sometimes after death the bloody serum is found suffused throughout the skin as in the blood striking of skins.

214. *The claveau or sheep pox* is also another variety of this disease, in which it takes on a pustular form. About the third day small variolæ appear: sometimes they are rather blotches than pustules. The weakness is usually extreme, and the putridity great. This form of the disease is seldom seen with us; but it is still known on the continent, where the pastures are very poor and to κ , and the general keeping meagre.

215. *The treatment* of all these in no wise differs from that directed under the inflammatory putrid fever of the ox. The doses of medicines being about a third of what is directed for them.

216. *Malignant epidemic or murrain.* Sometimes an epidemic prevails which greatly resembles the murrain of oxen; in appearances, termination, and treatment it resembles malignant epidemic of oxen. (178.)

217. *Peripneumonia or inflamed lungs, rising of the lights, glanderous rot, hose, &c.* These terms are all modifications of an inflamed state of the viscera of the chest, caught by undue exposure, bad pasturage, and often from over driving. The cough, tremblings, the redness of the eyes and nostrils, and the distillation of a fluid from them, with the heavings and hot breath, are all similar to those which characterize pneumonia or rising of the lights in oxen. We remember to have seen the disease strongly marked in the February of 1808, on a farm in the neighbourhood of Streatnam; where eleven sheep were attacked almost together, after a very stormy night. They were first affected by a loss of appetite, next with a fixed steadfast look, which was common to every one. After this, they reeled about, fell backwards and became convulsed. When seen, five were almost dead, whose internal appearances fully confirmed the nature of the disease. The rest recovered by bleeding and drenching, with drenches composed of nitre and tartar emetic. Sometimes the symptoms of pneumonia do not kill immediately, but degenerate into an ulceration of the lungs; which is then called the *glanderous rot*. This stage is always fatal: the others may, by early attention, be combatted by judicious treatment, as detailed under the same disease in oxen.

218. *A chronic cough* in sheep, when not symptomatic of rot, is always cured by a change of pasturage, particularly into a salt mash.

219 *Inflammation of the stomach* occurs from various causes. A

common one arises from eating noxious vegetables, and produces the affections termed *tremblings*. It also produces the *grass ill* in lambs, which latter is always accompanied with black fœtid fæces, and is readily removed by an ounce of castor oil; while the former usually yields to half an ounce of oil of turpentine, beaten up with the yolk of an egg. Some herbs (as *Atropa belladonna*) when eaten produce spasmodic affections, which are called by shepherds *leaping ill*: in such cases the water solution of aloes (*Vet. Pha* 164,) in doses of two or three ounces is useful. Daffy's elixir we have also known to be given with good effect.

220. *The hove, blast, or wind colic*. Sheep are as liable to be distended with an enormous collection within the maw, as oxen. An instrument similar to that invented by Dr. Monro is also made for them; and when not relieved by these means, the same remedies are applicable, as are directed for oxen. (188.)

221. *A wind colic* will also sometimes affect sheep more from the quality than the quantity of what they eat; it is best relieved by an ounce of castor or salad oil with an ounce of gin.

222. *Inflamed liver, blood rot, or hot yellows*, are liver affections arising from fever settling in that organ; or from obstructed bile irritating it. Sometimes there are great marks of fever, and at others more of putridity; according to which, treat as may be gathered from ox pathology.

223. *Jaundice* also now and then occurs, when refer to that disease in oxen. (197.)

224. *Dysentary, gall scour, braxy*, are all affections brought on by sudden changes of temperature, or of undue moisture acting with cold pasturage. It is often seen in sultry autumns:—Treat as under ox braxy. (196.)

225. *Scouring* is the diarrhœa of sheep, and in very hot weather soon carries them off. It should be early attended to, by abstracting the affected and housing them. The *treatment* is seen under diarrhœa of oxen, (195,) which it closely resembles.

226. *Pinning, tag-belt, break-share*. The two former are only the adhesion of the tail to the wool, and the excoriation brought on by diarrhœa; the latter is the diarrhœa itself, known to some by this term.

227. The *rot in sheep* is also called *great rot*, and *kydropic rot*, &c. but it is more popularly known by the single term of *rot*.

Many causes have been assigned for it, as the *faciola hepatica*. or fluke worm; some particular plants eaten as food; ground eating; snails and other ingesta: but as most of the supposed deleterious herbs have been tried by way of experiment, and have failed to produce the disease, so it is attributable to some other cause.—Neither is there reason to suppose that the fluke worm occasions it, since we know the biliary vessels of other animals, as horses, asses, rats, &c. often have them; and above all, because that they are not always present in the rotted subject. From long experience and the almost invariable effect produced by a humid state of atmosphere, soil, and product, we are warranted in concluding these are the actual and immediate agents; perhaps the saturated food itself is sufficient to do it. The morning dew has been supposed equal to it. Bakewell, when his sheep were past service, used to rot them purposely, that they might not pass into other hands. This he always readily did by overflowing his pasturages. But great differences of opinion exist as to the quantity, form, and varieties of moisture productive of this fatal disease. It is said that land on which water flows, but does not stagnate, will not rot however moist; but this is contradicted by the experience of Bakewell, who used merely to flood his lands a few times only to rot his sheep. It is also said that they are safe from rot on Irish bogs, salt marshes, and spring flooded meadows, which experience seems to verify. It is also said that the very hay made from unsound land will rot; but this wants confirmation. When salt marshes are found injurious it is only in such years when the rain has saturated, or rather super-saturated such marshes. That putrid exhalations unaccompanied with moisture can occasion rot, wants confirmation also; for these commonly go together, and it is difficult to separate their effects. It is not perhaps the actual quantity of water immediately received by land, but the capacity of that land to retain the moisture, which makes it particularly of a rotting quality.

228. The *signs of rottenness* are sufficiently familiar to persons about sheep. They first lose flesh, and what remains is flabby and pale; they lose also their vivacity. The naked parts as the lips, tongue, &c. look livid, and are alternately hot and cold in the advanced stages. The eyes look sad and glassy, the breath is fetid, the urine small in quantity and high coloured; and the bowels are at one time costive and at another affected with a black purging. The pelt will come off on the slightest pull in almost all cases. The disease has different degrees of rapidity, but is always fatal at last. This difference in degree occasions some rotted

sheep to thrive well under its progress to a certain stage, when they suddenly fall off, and the disease pursues the same course with the rest. Some graziers know this crisis of declension, as it has been called, and kill their sheep for market at the immediate nick of time with no loss. In these cases no signs of the disease are to be traced by ordinary inspectors, but the existence of the flukes, and still more a certain state of liver and of its secretions, are characteristic marks to the wary and experienced.

229. The *treatment of rot* is seldom successful unless when it is early commenced, or when of a mild nature; a total change of food is the first indication, and that to a dry wholesome kind: all the farina are good, as the meals of wheat, barley, oats, peas, beans, &c. Carrots have done good mixed with these; broom, burnet, elder, and mellilot, as diuretics, have also been recommended; but it is necessary to observe, that there is seldom any ventral effusion but in the latter stages of the complaint. As long as the liver is not wholly disorganized, the cure may be hoped by a simple removal of the cause, which has been shown to be a variable temperature, with excessive moisture of pasturage which may also be aided by such remedies as assist the action of the biliary system; salt acts in this way, and thus salt mashes are good; salt may also be given in the water. Salt appears the principal ingredient in Flesh's patent restorative for sheep, for it states it to be composed of turpentine, sal ammoniac, turmeric, quicksilver, brimstone, salt opium, alkanet root, bark, antimony, camphor, and distilled water; but in this medley none of the articles can be in sufficient quantity to prove useful, but the salt. In the more advanced stages of the disease, when the liver has become materially affected, it is prudent to rub the bellies of each sheep with half a drachm of mercurial ointment every other day for a week; give also the following, every morning; watery tincture of aloes half an ounce; decoction of willow bark, four ounces; nitric acid twenty-five drops.

230. The *pelt rot, hunger rot, or naked disease*, is a variety of the former, but with this difference, that whereas the liver in the hydroptic rot, is principally affected; in this the whole of the chylopoietic viscera are injured; the mesenteric glands are always swollen and obstructed, and from thence arises the emaciation and unhealthy state of all the secretions, by which the rot becomes incapable of receiving nutriment, and falls off leaving the body bare, and in the last stages the teeth and horns also looser. Indifferent, unhealthy keeping, is a very common cause of

this malady, and a contrary course of feeding is the best remedy when the disease has not gone on too long.

231. *The scab, shab, ray or rubbers*, are sometimes erysipelatous eruptions, and sometimes they are psoric or mangy ones. In the former instance they are universal and very red, occasioning a great heat and itching, and are thence called the *rubbers*: in such cases, nitre administered quickly relieves, with change of food. The eruptive scab is seldom cured without an external application either of those directed for mange, lowered to half the strength, will relieve it once. (See *Vet. Pha.* 171 and 172.)

232. *Foot rot* sheep have a secretory outlet between the claws peculiar to them, which is liable to become obstructed: their feet are also liable to become injured, and then diseased, from travelling or continued standing on wet soils: but the real foot rot is an endemial affection which sometimes attacks half of the flock. It must be attended to by removing all diseased portions, and then dressing with the thrush paste, or foot rot application, (*Vet. Ph.* 133,) and afterwards wrapping up from external exposure.

233. *Staggers, gid, turnsick, goggles, worm under the horn, sturdy, watery head, and pendro*, are all popular terms for hydatids, or an animal now known as the *tænis globulus*, which by some unaccountable means, finds its way to the brain and settles itself there, either in some of its ventricles or more frequently on its substance. Their size varies from the smallest speck to that of a pigeon egg, and the sheep it attacks are usually under two years old. These animals are likewise occasionally found in all the natural cavities of the body.

234. *The appearances of cerebral hydatids* are, stupidity, a disposition to sit on the rump, to turn to one side, and to incline the head to the same while at rest. The eyes glare, and from oval, the pupils become round. An accurate examination will now usually discover some softness at a particular part of the skull, generally on the contrary side to that which the animal hangs the head: when no softness of the skull is discernable, the hydatid usually exists in some of the ventricles, and the destruction of the sheep is certain and quick, from the greater disturbance to the functions of the brain; but when it is situated on the surface, it sometimes requires many months to destroy; an absorption of the bone takes place and the hydatid increases, which produces the thickness in the skull opposite to the affected part.

235. *This disease is not incurable*, as has been supposed, but it is only relieved by a manual operation. In France it has been successfully treated by the application of the actual cautery: a pointed iron, heated red hot, is forced through the skin and skull, to the surface of the brain; the principal nicity of which, is in penetrating the hydatid with the hot iron without wounding the brain itself. In England, some shepherds are very dexterous at *wiring*, which they do by thrusting a wire up the nostrils till it rests against the skull. In the passage of the wire, the hydatid is usually ruptured; others elevate the skull (by means of a trephine, or even a knife) opposite to the soften portion, and extract the hydatid, if possible, whole, which a little care will effect, by drawing it away with a blunt pincer, gently moving it from side to side. Tapping is merely letting out the fluid contents of the hydatid by an awl, which is practised by some shepherds with success; and if the instrument be not thrust too far, the animal is never injured; to avoid which, it is passed obliquely. A well hardened gimblet is a proper instrument, with which the skull is easily penetrated, and an opening by the twisting of the instrument is made, sufficiently large in the hydatid itself, to discharge its contents, which is all that is sufficient to insure its destruction, and which, if no other exist, is followed by immediate recovery.

236. *Frontal worms.* Sheep are observed to gather together, with their noses thrust inward to avoid the attack of the *cæstrus ovis*, or fly, that lays its eggs on the inner margin of the nose, which, having become hatched, the larva creep up into the frontal and maxillary sinuses, to the torment of the sheep. It is recommended to cover their nostrils during the short stay of these insects, with a gauzy substance, through which the animal can breathe, and keeping it on with some adhesive plaster, &c. or daubing the nose often with tar, train oil, or mercurial ointment, &c. *Remedy*—Take half a pound of good Scotch snuff, pour two quarts of boiling water on it, stir it and let it stand till cold, inject about a table spoonful up each nostril, with a syringe; repeat three or four times at proper intervals, from the middle of October to the first of January. Half an ounce of assafœtida pounded in a little water added to the snuff will make it more effectual. The owner need not be alarmed after the operation to see the sheep very drunk, &c. as they will soon recover.

237. *Fluke worms* are a parasitic animal, found in the biliary sinuses, not only of the sheep, but of the horse, ass, goat, deer &c. and whose existence is rather a consequence than a cause of morbidity

238. *Diseases of lambs* are confined to indigestion, and eruption of secreted matter: the former shows itself in colic, which is relieved as in sheep, and also by diarrhœa, to be likewise cured by the means detailed for them; the latter is more obstinate, begins on the rump, gradually extending along the chine, and when it becomes more universal, it usually destroys. The cure consists in giving daily drinks of half a drachm of cream of tartar, and one drachm of sulphur, in four ounces of chamomile decoction. Anoint also with mild mercurial ointment and Turner's cerate in equal quantities.

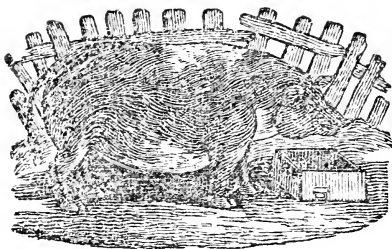
239. *Poison.* Sheep are often poisoned by eating laurel or ivy, as it is commonly called (not the magnolium.) The symptoms of which is their foaming at the mouth, then vomiting the half masticated leaves and green juice, by which the mouth of the animal is discoloured. *Remedy*—Take a gill of sweet oil, hog's lard, or fresh butter; mix it with a pint of new milk. If taken seasonably it will effect a cure. *Or*, an egg given to each of the diseased, in the shape of a natural bolus, by simply breaking the egg and slipping the yelk, and as much white as practicable, down the throat of the animal. The sheep, after swallowing the egg, will vomit up the leaves and green juice, but none of the egg. To cows give four times the quantity.

240. *To destroy sheep ticks.* Make a weak solution of arsenic, in which the lambs are to be dipped a few days after shearing the sheep, as the ticks having then no harbour on the old sheep, will resort to the lambs for shelter—this is the time to destroy them. Not the smallest injury will occur to the sheep, provided you take care to keep the head out of the water. Three persons are necessary—two to hold and dip the lamb, the third to squeeze the wool while the lamb is held over the tub. *Or*—An ointment made of Scotch snuff and hog's lard, or train oil, will kill or destroy them by one application. One ounce of snuff to a pound of lard or oil, is about the proportion.

241. The *castrating lambs*, may be performed any time from the age of a fortnight or three weeks, to that of a month or six weeks, the lambs should be in a healthy state when it is done, as under any other circumstance they are likely to be destroyed by it. The operation is performed by opening the scrotum or cod and drawing out the testicles with the spermatic cord. This is often done with the teeth in the young state of the animal, but when the operation is performed at a later period, it is usual to have recourse

to the knife, the arteries being taken up and secured by means of ligatures or the searing iron; the business to be done in fair weather, when not too warm; the gelded lambs, &c. should be kept in a dry shelter and quiet situation for a few days.

Sore nipples. Lambs very often die of hunger from their dams refusing them suck. The cause of this is sore nipples, or some tumour in the udder, in which violent pain is excited by the striking of the lamb. Washing with sugar of lead and water or spirits, will remove the complaint.

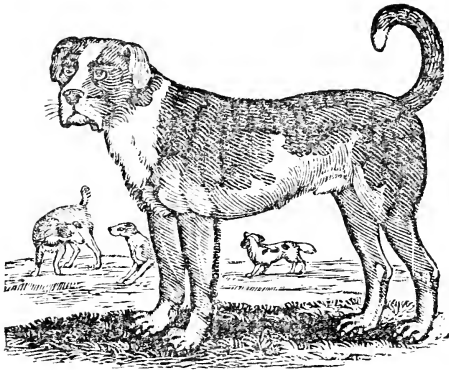


OF THE DISEASES OF SWINE.

242. *Swine are subject to various diseases*, but according to Lawrence, they are not easily doctored. They are subject, he says, to pox or measles, blood striking, staggers, quincy, indigestion, catarrh, peripneumonia, and inflammation of the lungs, called heavings. When sick, pigs will eat, and they will take medicine in their wash, when they will not eat, there is no help for them. As aperients, cleansers, and alteratives, sulphur, antimony, and madder, are our grand specifics, and they are truly useful. As cordials and tonics, treacle and strong beer, in warm wash, and good peas and pollard. In the measles, sulphur, &c. and, if the patient require it, give cordials now and then; in staggers, bleeding, fresh air, and perhaps nitre; in catarrh, a warm bed, and warm cordial wash, and the same in quincy or inflammation of the glands in the throat. If external suppuration appear likely, discharge the matter when ripe, and dress with tar and brandy, or balsam. The heavings or unsoundness of the lungs in pigs, like the unsoundness of the liver in lambs, is sometimes found to be hereditary; there is no remedy. This disease in pigs is often the consequence of colds from wet lodging, or hasty feeding in a poor state; in a certain stage it is highly inflammatory, and without remedy. Uction with train oil, and the internal use of it, have been sometimes thought beneficial.

243. *Cutting and spaying.* Cutting the young pig is performed at six or seven weeks old, according to their strength; in a week after which they may be weaned. After weaning shut up the sow closely, feed well, and on the reflux of the milk, she will express very loudly her desire for the company of the *boar*. It is necessary to state that sows are voracious, and occasionally fierce and savage animals, and have actually devoured young children. The sow is

spayed while she gives suck, and the boar safely castrated at any age. The operation of *castrating* is performed by cutting them across the middle of each stone, then pull them gently out and anoint the wound with tar. *Spaying* is performed by cutting in the mid flank, on the left side, with a sharp knife or lancet, in order to extirpate or cut off the parts destined for conception, and then stitch up the wound, anoint the part with tar salve, keeping the animal warm for two or three days. The usual way is to make the incision in a sloping manner, two inches and a half long, that the fore finger may be put in towards the back, to feel for the ovaries, which are two kernels as big as acorns, one on each side of the uterus, one of which being drawn towards the wound, the cord or string is cut, and thus both taken out.



THE DISEASES OF DOGS.

244. The *diseases of dogs* are very numerous. The following are described by Blaine as the most prevalent, with their methods of cure.

245. The *canine asthma* is hardly ever observed to attack any but either old dogs, or those who, by confinement, too full living, and want of exercise, may be supposed to have become diseased by these deviations from a state of nature. It is hardly possible to keep a dog very fat for any great length of time, without bringing it on. This cough is frequently confounded with the cough that precedes and accompanies the distemper, but it may be readily distinguished from this by an attention to circumstances, as the age of the animal, its not affecting the general health, nor producing immediate emaciation, and its less readily giving way to medicine.

246. The *cure* is often very difficult, because the disease has in general been long neglected before it is sufficiently noticed by the owners. As it is in general brought on by confinement, too much warmth, and over feeding; so it is evident the cure must be begun by a steady, persevering alteration in these particulars. The medicines most useful, are alteratives, and of these occasionally emetics are the best. One grain of tartarised antimony (i. e. tartar emetic) with two, three, or four grains of calomel, is a very useful and valuable emetic. This dose is sufficient for a small dog, and may be repeated twice a week with great success—always with palliation.

247. Of *diseases of the eye*, dogs are subject to almost as great a variety as ourselves, many of which end in blindness. No treatment yet discovered will remove or prevent this complaint.

248. *Sore eyes*, though not in general ending in blindness, are very common among dogs. It is an affection of the eyelids, is not unlike the scrofulous affection of the human eyelids, and is equally benefitted by the same treatment: an unguent made of equal parts of nitrated quicksilver ointment, prepared tatty and lard, very lightly applied. Dropsy of the eyeball is likewise sometimes met with, but it is incurable.

249. *Cancer*. The virulent dreadful ulcer, that is so fatal in the human subject, and is called cancer, is unknown in dogs; yet there is very commonly a large schirrus swelling of the teats in bitches and of the testicles (though less frequent) in dogs, that as it sometimes becomes ulcerated, so it may be characterized by this name. In the early state of the disease discutients prove useful, as vinegar with salt, and camphor and Spanish flies, with mercurial ointment, have sometimes succeeded; taking care to avoid irritating the part so much as to produce blister. But when the swelling is detached from the belly, and hangs pendulous in the skin, it had better be removed, and as a future preventative suffer the bitch to breed. Schirrus testicles are likewise sometimes met with; for these no treatment yet discovered succeeds but the removal of the part, and that before the spermatic chord becomes much affected, or it will be useless.

250. *Colic*. Dogs are subject to two kinds of colic; one arising from constipation of the bowels, the other is a kind peculiar to dogs, apparently partaking of the nature of rheumatism, and also of spasm. From a sudden or violent exposure to cold, dogs become sometimes suddenly paralytic, particularly in the hinder parts; having great tenderness and pain, and every appearance of lumbago. In every instance of this kind, there is considerable affection of the bowels, generally costiveness, always great pain. A warm bath, external stimulants, but more particularly active aperients, remove the colic. Colic arising from costiveness, is not in general violently acute from the pain it produces; sometimes, however, it appears accompanied with more spasm than is immediately dependent on the confinement of the bowels. In the former give active aperients, as calomel with pil. cochicæ, i. e. aloetic pill and clysters; in the latter castor oil with laudanum and ether.

251. *Cough*. Two kinds of cough are common among dogs, one accompanying distemper, the other in an asthmatic affection of the chest. (See 245, 252.)

252. *Distemper*. This is by far the most common and most fatal among the diseases of dogs; hardly any young dog escapes it—and of the few who do escape it in their youth, three-fourths are attacked with it at some period afterwards: it being a mistake that young

dogs only have it. It however, generally attacks before the animal arrives at eighteen months old. When it comes on very early, the chances of recovery are very small. It is peculiarly fatal to grey hounds, much more so than to any other kind of dog, generally carrying them off by excessive scouring. It is very contagious, but it is by no means necessary that there should be contagion present to produce it; on the contrary, the constitutional liability to it is such, that any cold taken may bring it on; and hence it is very common to date its commencement from dogs being thrown into water, or shut out on a rainy day, &c. There is no disease which presents such varieties as this, either in its mode of attack, or during its continuance. In some cases it commences by purging, in others by fits. Some have cough only, some waste, and others have moisture from the eyes and nose, without any other active symptom. Moist eyes, dullness, wasting with slight cough, and sickness, are the common symptoms that betoken its approach. Then purging comes on, and the moisture from the eyes and nose from mere mucus, becomes pus or matter—there is also frequently sneezing, with a weakness in the loins. When the disease in this latter case is not speedily removed, universal palsy comes on—during the progress of the complaint some dogs have fits. When one fit succeeds another quickly, the recovery is extremely doubtful. Many dogs are carried off rapidly by the fits or by purging; other waste gradually from the running from the nose and eyes, and these cases are always accompanied with great marks of putridity.

253. *The cure.* In the early stages of the complaint give emetics; they are peculiarly useful. A large spoonful of common salt dissolved in three spoonfuls of warm water, has been recommended; the quantity of salt being increased according to the size of the dog, and the difficulty of making him vomit. While a dog remains strong, one every other day is not too much: the bowels should be kept open, but active purging should be avoided. In case the complaint should be accompanied with excessive looseness, it should be immediately stopped by balls made of equal parts of opium, gum arabic, prepared chalk, and conserve of roses with rice milk as food. Two or three grains of James' powder may be advantageously given at night, in cases where the bowels are not affected, and in the cases where the matter from the nose and eyes betokens much putridity, we have witnessed great benefits from balls made of what is termed Friar's balsam, gum guaiacum, and chamomile flowers in powder. Dogs in every stage of the disease should be particularly well fed. A seton we have not found so useful as is generally supposed. where the nose is much stopped rubbing tar on the upper part

nseful, and when there is much stupidity and the head seems much affected, a blister on the top is serviceable.

Or, Take one part aloes, two parts salt petre, and four parts sulphur; incorporate the whole together, and take as much as will lie on the point of a dinner knife, either put it into warm milk, and drench the dog, or give it to him in slices of meat. Tie up your dog for twenty-four hours after, and repeat the same in a day or two after, should the dog not be relieved.

254. *Fits*. Dogs are peculiarly subject to fits. These are of various kinds and arise from various causes. In distemper, dogs are frequently attacked with convulsive fits, which begin with a champing of the mouth and shaking of the head, gradually extending over the whole body. Sometimes an active emetic will stop their progress, but more generally they prove fatal. *Worms* are often the cause of fits in dogs. These deprive the animal wholly of sense; he runs wild till he becomes exhausted, when he gradually recovers, and perhaps does not have one again for some weeks. Confinement produces fits and likewise costiveness. Cold water thrown over a dog will generally remove the present attack of a fit; and for the prevention of their future recurrence it is evident that the foregoing account of causes must be attended to.

255. *Inflamed bowels*. Dogs are very subject to inflammation of their bowels, from costiveness, from cold, or from poison. When inflammation arises from costiveness, it is in general very slow in its progress, and is not attended with very acute pain, but it is characterized by the want of evacuation and the vomiting of food taken, though it may be eaten with apparent appetite. In these cases, the principal means to be made use of, are the removal of the constipation by active purging, clysters, and the warm bath. Calomel with aloes forms the best purge. But when the inflammation may be supposed to arise from cold, then the removal of any costiveness that may be present, is but a secondary consideration. This active kind of inflammation is characterized by violent panting, total rejection of food and constant sickness. There is great heat in the belly, and great pain; it is also accompanied with great weakness and the eyes are very red. The bowels should be gently opened with clysters, but no aloes or calomel should be made use of. The belly should be blistered, having first used the warm bath. When the inflammation arises from poison, there is then constant sickness, the nose, paws and ears are cold, and there is a frequent evacuation of brown or bloody stools. Castor oil should be given, and clysters of mutton broth thrown up, but it is seldom any treatment succeeds.

256 *Inflamed lungs*. Pleurisy is not an uncommon disease

among dogs. It is sometimes epidemic, carrying off great numbers. Its attack is rapid and it generally terminates in death on the third day, by a great effusion of water in the chest. It is seldom that it is taken in time, when it is, bleeding is useful, and blisters may be applied to the chest.

257. *Madness.* The symptoms of madness are concisely summed up by Daniel, in the following words: "at first the dog looks dull. shows an aversion to his food and company, does not bark as usual. but seems to murmur; is peevish and apt to bite strangers; his ears and tail drop more than usual, and he appears drowsy; afterwards he begins to loll out his tongue and froth at the mouth, his eyes seeming heavy and watery; if not confined he soon goes off. runs panting along with a dejected air, and endeavours to bite any one he meets." As persons are continually alarmed at the approach of every strange dog, the following observations founded on experience may be of service in knowing what dogs to avoid: I have seen many mad dogs but never knew one in that state to curl its tail. This is a certain indication of *not* being mad: If you see a dog *dirty at the mouth*, coming at a trot with his head high, and a drooping tail avoid him as a viper. Or if you see one sitting sickly and dirty at the mouth, avoid him, though it is not likely that he will snap at you in that period of the disease. I never met a mad dog, on being pursued, (if his pursuers were not in actual reach to stone him, &c.) to exhibit any signs of fear, he generally goes if not impeded, in a straight line against the wind at a brisk trot, wholly unconcerned at the shouts of the multitude pursuing him, and never squats his tail. I never knew a dog that was not mad, on being pursued and shouted after by a number of people, not to exhibit every symptom of terror—squatting his tail, turning his head and scampering in every direction. If a mad dog escapes being killed, he seldom runs above two or three days, when he dies, exhausted with heat, hunger, and disease. As this is a subject of no slight importance, we shall stand excused for introducing the criteria as described by Blaine, whose account of the disease founded on long experience and attentive observation, is calculated to remove many unfounded and dangerous prejudices relative to it. He describes it as commencing sometimes by dullness, stupidity and retreat from observation; but more frequently, particularly in these dogs that are immediately domesticated around us, by some alteration in their natural habits; as a disposition to pick up and swallow every minute object on the ground; or to lick the parts of another dog incessantly, or to lap his own urine, &c. About the second or third day. the disease usually resolves itself into one of two types. The one is *led* raging and the other dumb madness. These distinctions are not

however always clear; and to which is owing so much of discrepancy in the accounts given by different persons of the disease.

258. The *raging madness*, by its term has led to an erroneous conclusion, that it is accompanied with violence and fury, which however, is seldom the case: such dogs are irritable and snappish, and will commonly fly at a stick held to them, and are impatient of restraint; but they are seldom violent except when irritated or worried. On the contrary, till the last moment they will often acknowledge the voice of their master and yield some obedience to it. Neither will they usually turn out of their way to bite human persons, but they have an instinctive disposition to do it to dogs, and in a minor degree to other animals also; but as before observed, seldom attack mankind without provocation.

259. *Dumb madness* is so called, because there is seldom any barking heard, but more particularly, because the jaws drop paralytic, and the tongue lolls out of the mouth, black, and apparently strangulated: a strong general character of the disease, is the disposition to scratch their bed towards their belly; and equally so is the general tendency to eat trash, as hay, straw, wood, coals, dirt, &c. and it should be remembered, that this is so very common and so invariable, that the finding these matters in the stomach after death, should always render a suspicion formed of the existence of the disease, confirmed into certainty. Blaine is also at great pains to disprove the notion generally entertained that rabid dogs are averse to water; and neither drink or come near it. This error, he contends, has led to most dangerous results; and is so far from true, that mad dogs, from their heat and fever, are solicitous for water, and lap it eagerly. When the dumb kind exists in its full force, dogs cannot swallow what they attempt to lap; but still they will plunge their heads in it, and appear to feel relief by it: but in no instance out of many hundreds, did he ever discover the smallest aversion to it. He lays very great stress on the noise made by rabid dogs, which he says is neither a bark nor a howl, but a tone compounded of both. It has been said by some that this disorder is occasioned by heat or bad food, and by others that it never arises from any other cause but the bite. Accordingly this malady is rare in the northern parts of Turkey, more rare in the southern parts of that empire, and totally unknown under the burning sky of Egypt. At Aleppo, where these animals perish in great numbers for want of water and food, and by the heat of the climate, this disorder was never known. In other parts of Africa and in the hottest zone in America, dogs are never attacked with madness. Blaine knows of no instance of the complaint being cured, although he has tried to their fullest extent.

the popular remedies of profuse bleedings, strong mercurial and arsenical doses, vinegar, partial drowning, night shade, water plantain, &c. he therefore recommends the attention to be principally directed towards the prevention of the malady.

260. *The preventive treatment of rabies or madness*, is according to Blaine, always an easy process in the human subject, from the immediate part bitten, being easily detected; in which case the removal of the part by excision or cautery is an effectual remedy. But unfortunate for the agriculturist, it is not easy to detect the bitten parts in cattle, nor in dogs; and it would be therefore most desirable if a certain internal preventive were generally known. Dr. Mead's powder, the Ormskirk powder, sea bathing, and many other nostrums are deservedly in disrepute: while a few country remedies, but little known beyond their immediate precincts, have maintained some character. Conceiving that these must all possess some ingredient in common, he was at pains to discover it and which he appears to have realized by obtaining among others the compositions of Webb's Watford drink. In this mixture, which is detailed below, he considers the active ingredient to be the buxus or box, which has been known as a prophylactic as long as the times of Hippocrates and Celsus, who both mention it. The recipe detailed below has been administered to nearly three hundred animals of different kinds, as horses, cows, sheep, swine and dogs and appears to have succeeded in nineteen out of every twenty cases where it was fairly taken and kept on the stomach. It appears also equally efficacious in the human subject; in which case he advises the extirpation of the bitten parts also. The box preventive is thus directed to be prepared:—*Take of the fresh leaves of the tree-box, two ounces; of the fresh leaves of rue, two ounces; of sage, half an ounce; chop these fine and boil in a pint of water to half a pint; strain carefully, and press out the liquor very firmly, put back the ingredients into a pint of milk, and boil again to half a pint; strain as before; mix both liquors, which forms three doses for a human subject. Double this quantity is proper for a horse or cow. Two-thirds of the quantity is sufficient for a large dog; half for a middling sized, and one-third for a small dog. Three doses are sufficient, giving each subsequent morning fasting, the quantity directed being that which forms these three doses. As it sometimes produces strong effects on dogs, it may be proper to begin with a small dose, but in the case of dogs we hold it always prudent to increase the dose till the effects are evident, by the sickness, panting, and uneasiness of the dog. In the human subject where this remedy appears equally efficacious, we have never witnessed any unpleasant or active effects, neither are such observed*

in cattle of any kind. About forty human persons have taken this remedy, and in every instance it has succeeded equally as with animals: but candor obliges us to notice that in a considerable proportion of these, other means were used, as the actual or potential cautery: but in all the animals other means were purposely omitted. That this remedy therefore has a preventive quality, is unquestionable, and now perfectly established; for there was not the smallest doubt of the animals mentioned either having been bitten, or of the dog being mad who bit them, as great pains were in every instance taken to ascertain these points.

261. *To prevent canine madness.* Pliny recommends worming of dogs; and from his time to the present it has had, most deservedly says Daniel its advocates. He tells us, that he had various opportunities of proving the usefulness of this practice, and recommends its general introduction. The fact, however, is, that taking out the worm has nothing to do with annihilating the disorder, although it will most certainly hinder the dog seized with it from doing any hurt to man or beast. A late author asserts, he had three dogs that were wormed, bit by mad dogs at three several periods, yet notwithstanding they all died mad—they did not bite, nor do any mischief, that being determined to make a full experiment, he shut one of the mad dogs up in a kennel, and put to him a dog he did not value—the mad dog often run at the other to bite him, but his tongue was so swelled that he could not make his teeth meet; the dog was kept in the kennel until the mad one died, and was purposely preserved for two years afterwards, to note the effect, but he never ailed any thing, although no remedies were applied to check any infection that might have been received from the contact of the dog. The writer has had various opportunities of proving the usefulness of worming, and inserts three of the most striking instances, under the hope of inducing its general practice. A terrier-bitch went mad, that was kept in a kennel with forty couple of hounds; not a single hound was bitten, nor was she seen to offer to bite. The bitch being of a peculiar sort, every attention was paid to the gradations of the disease (which were extremely rapid) minutely noted; the hydrophobia was fast approaching before she was separated from the hounds, and she died the second day after; at first warm milk was placed before her, which she attempted to lap, but the throat refused its functions; from this period she never tried to eat or drink, seldom rose up, or even moved, the tongue swelled very much, and long before her death the jaws were distended by it. A spaniel was observed to be seized by a strange dog, and was bit in the lip; the servant who ran up to part them narrowly es-

escaped, as the dog twice flew at him; a few minutes after the dog had quitted the yard, the people who had pursued, gave notice of the dog's madness, who had made terrible havoc in a course of ten miles from whence he had set off. The spaniel was a great favourite, had medicine applied, and every precaution taken; upon the fourteenth day he appeared to loathe his food, and his eyes looked unusually heavy: the day following he endeavored to lap milk, but could swallow none; from that time the tongue began to swell: he moved but seldom and on the third day he died; for many hours previous to his death, the tongue was so enlarged, that the fangs or canine teeth could not meet each other by upwards of an inch. The hounds were some years after parted with, and were sold in lots: a madness broke out in the kennel of the gentleman who purchased many of them, and although several of these hounds were bitten and went mad, only one of them ever attempted to bite, and that was a hound from the Duke of Portland's, who in the operation of worming had the worm broke by his struggling, and was so troublesome that one half of it was suffered to remain; the others all died with symptoms similar to the terrier and spaniel, viz: a violent swelling of the tongue, and a stupor rendering them nearly motionless, and both which symptoms seemed to increase with the disease. The idea that worming prevents a dog from receiving the infection when bitten should be exploded; but the foregoing show how far it may be recommended for the restriction of a malady horrid in its effects, where a human being is concerned, and which to the sportsman and farmer are attended with such dangerous and expensive consequences. Blaine on the contrary, asserts, that the practice of worming is wholly useless and founded in error; and that the existence of any thing like a worm under the tongue is incontestibly proved to be false, and that what has been taken for it, is merely a deep ligature of the skin, placed there to restrain the tongue in its motions. He also observes, that the pendulous state of the tongue in what is called dumb madness, with the existence of a partial paralysis of the under jaw, which they could not bite, having happened to dogs previously wormed, has made the inability to be attributed to this source, but which is wholly an accidental circumstance; and happens equally to the wormed and unwormed dog.

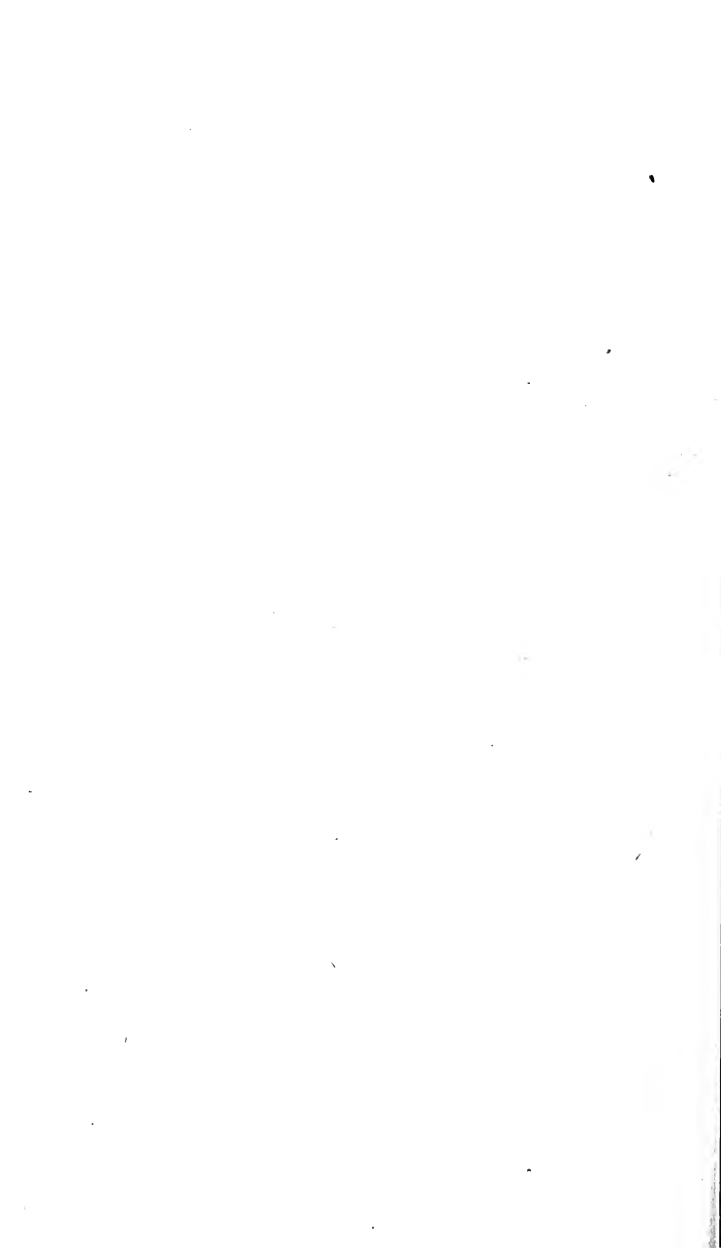
262. *The worming* of whelps is performed with a lancet, to slit the thin skin which immediately covers the worm; a small awl is then to be introduced under the centre of the worm to raise it up, the farther end of the worm will with very little force make its appearance, and with a cloth taking hold of that end, the other will be drawn out easily; care should be taken that the whole of

the worm comes away without breaking, and it rarely breaks unless cut into by the lancet, or wounded by the awl.

263. *Mange.* This is a very frequent disease in dogs, and is an affection of the skin, either caught by contagion, or generated by the animal. The scabby mange breaks out in blotches along the back and neck and is common to Newfoundland dogs, terriers, pointers, and spaniels, and is the most contagious. The cure should be begun by removing the first exciting cause, if removable, such as filth or poverty; or, as more general the contrary (for both will equally produce it,) too full living. Then an application should be made to the parts, consisting of sulphur and sal ammoniac: tar lime water will also assist. When there is much heat and itching, bleed and purge. Mercurials sometimes assist, but they should be used with caution; dogs do not bear them well. Or, fresh butter, free from salt, quarter of a pound; red precipitate, one ounce; Venice turpentine, one ounce: mix the whole well together, and put it into a pot for use, rub it on the parts affected morning and evening, keep your dog tied up, and keep him warm and dry for some days.

264. *Worms.* Dogs suffer very much from worms, which as in most animals, so in them are of several kinds: but the effects produced are nearly similar. In dogs having the worms the coat generally stares; the appetite is ravenous though the animal frequently does not thrive; the breath smells, and the stools are singular, sometimes loose and slimy, and at others hard and dry; but the most evil they produce is occasional fits, or sometimes a continued state of convulsion, in which the animal lingers sometime and then dies; the fits they produce are sometimes of the violent kind; at others they exhibit a more stupid character, the dog being senseless and going round continually. The cure consists while in this state, in active purgatives joined with opium, and the warm bath; any rough substance given internally, acts as a vermifuge to prevent the recurrence.





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